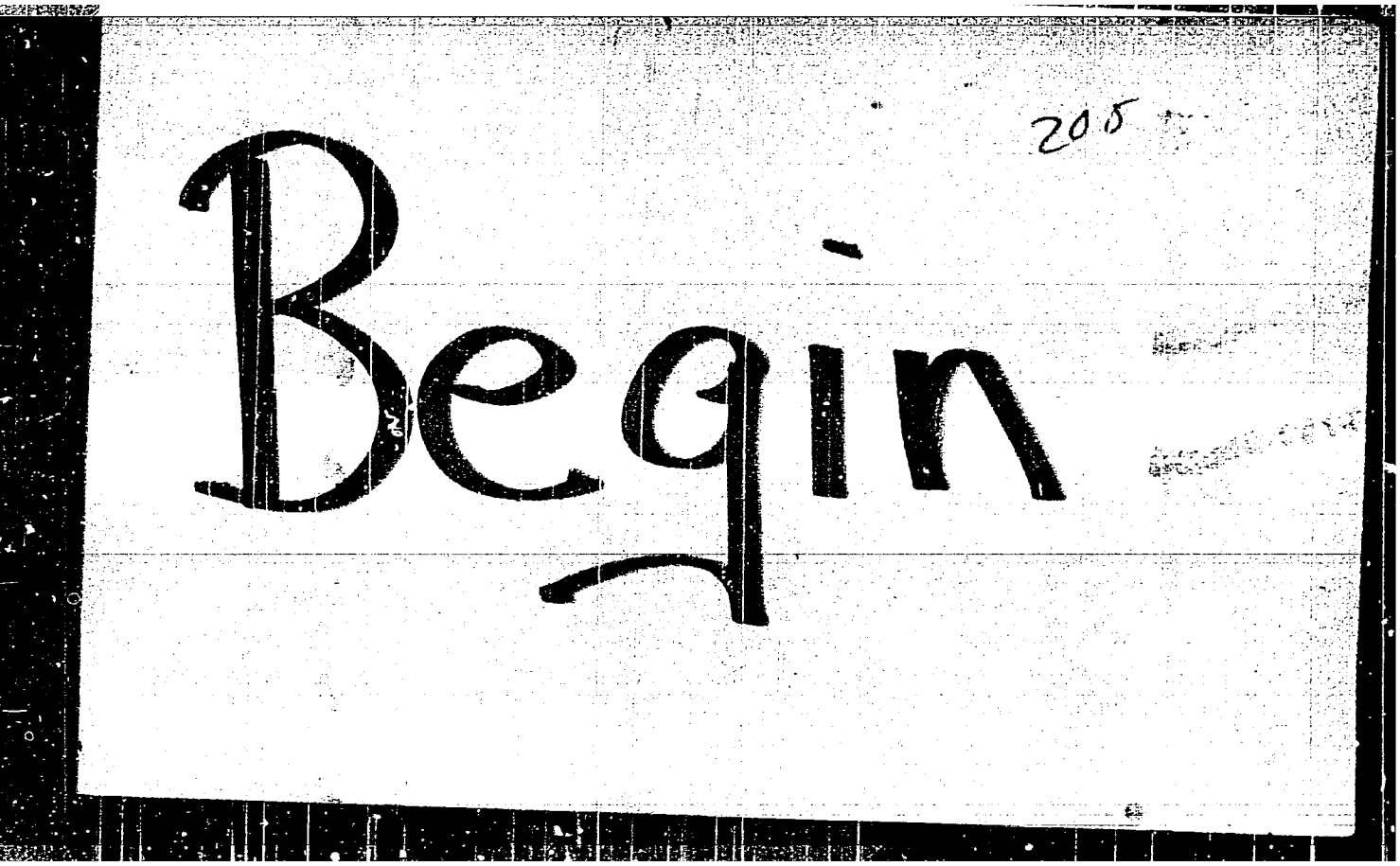
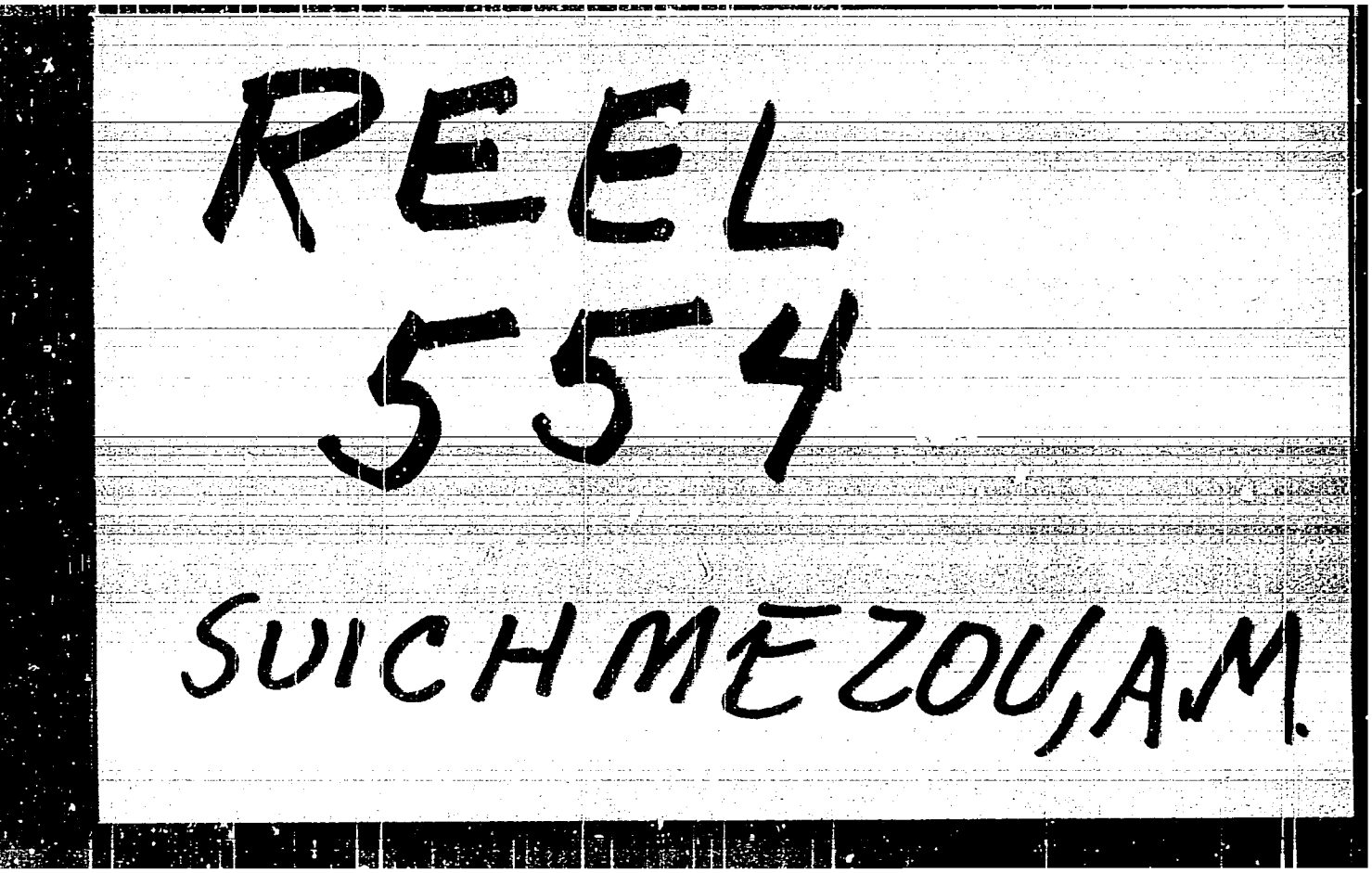




SUICHMEZOV, Aleksandr Mikhaylovich; LIPSHITS, S.G.

[Land of the quiet Don; sketches on local geography and history] Krai tikhogo Dona; kraevedcheskie ocherki. Rostov-na-Donu, Rostovskoe knizhnoe izd-vo, 1965. 109 p.
(MIRA 18:12)

SUICHMEZOV, V.

Equipment for the sterilization of tableware. Obshchestv.pit. no.8:42 Ag '59. (MIRA 12:12)
(Rostov-On-Don--Restaurants, lunchrooms, etc.--Equipment and supplies)

STOIANOV, Ves., inzh.; PASHOV, P., inzh; ATANASOV, B., inzh.; IANAKIEV, G., kand. na tekhn. nauki inzh.; SUIKOV, B., inzh.

Rational systems in mining large copper-poor ore deposits in the Elshitsa Mine, Panagyurski Mini State Mining Enterprise. Min delo 18 no.8: 11-16 '63.

1. Niproruda (for Stoianov, Pashov, Atanasov).
2. Minno-geolozhki institut (for Ianakiev).
3. DMP "Panagiurski m.ni" (for S'ikov).

BOGDANOV, Vyacheslav Mikhaylovich, prof.; KOROLEVA, A.I., retsenzent; BAKAREVA, A.I., retsenzent; TKAL', T.K., retsenzent; SUIMA, V.A., retsenzent; KOROLEVA, N.S., retsenzent; CHERKASOVA, M.P., red.; ZARSHCHIKOVA, L.N., tekhn. red.

[Microbiology of milk and milk products]Mikrobiologiia moloka i molochnykh produktov. 4 izd., perer. i dop. Moskva, Pishchepromizdat, 1962. 307 p. (MIRA 15:12)

1. Prepodavateli Khar'kovskogo tekhnikuma molochnoy promyshlennosti (for Koroleva, Bakareva, Tkal', Suima). 2. Starshiy mikrobiolog Moskovskogo molochnogo kombinata (for Koroleva, N.S.).
(Dairy bacteriology)

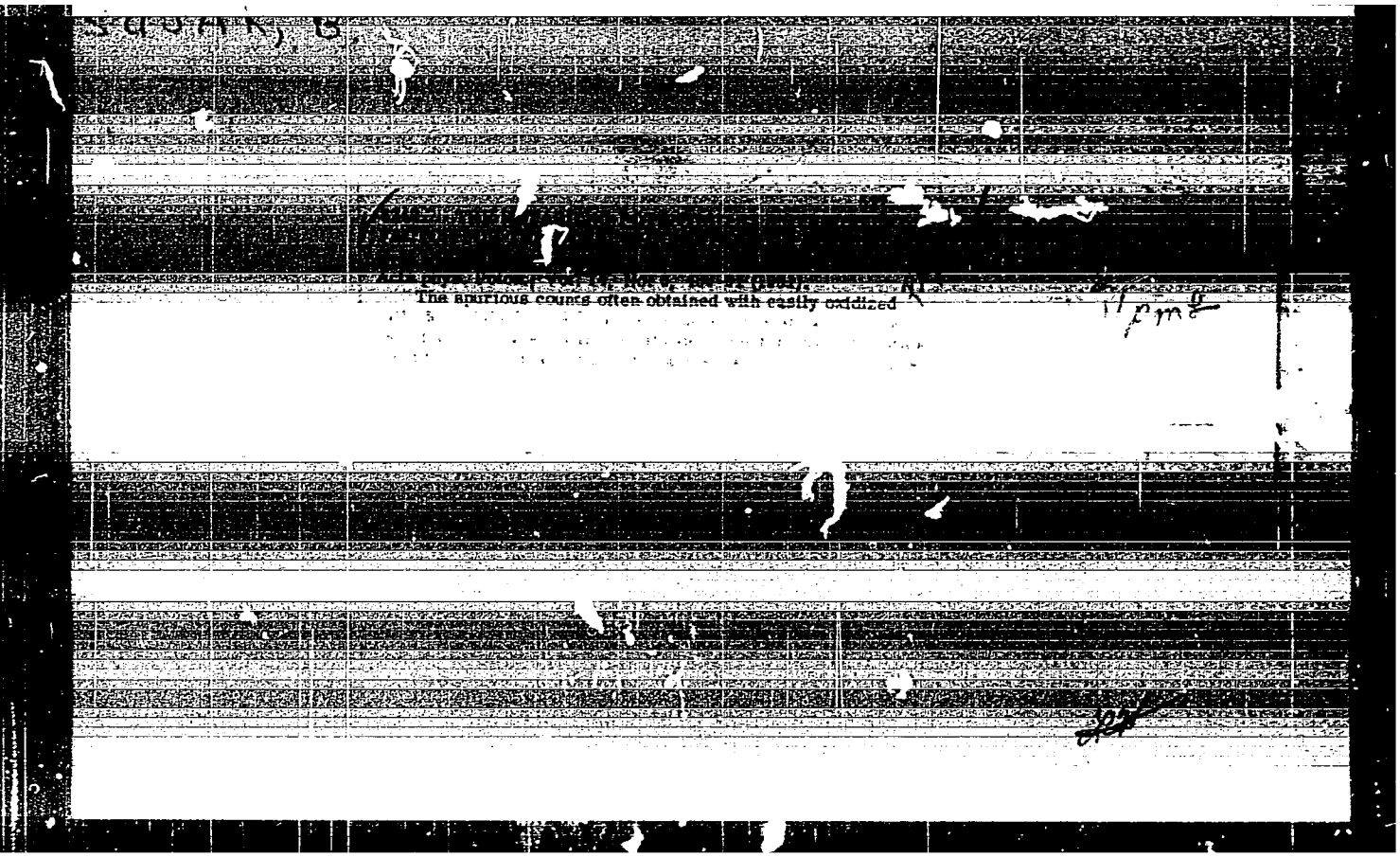
SUJAC, B.; BOHUN, A.

On the simulated thermostimulated coelectron emission of hydrates. Acta physica Pol 18 no.5:419-425 '59.

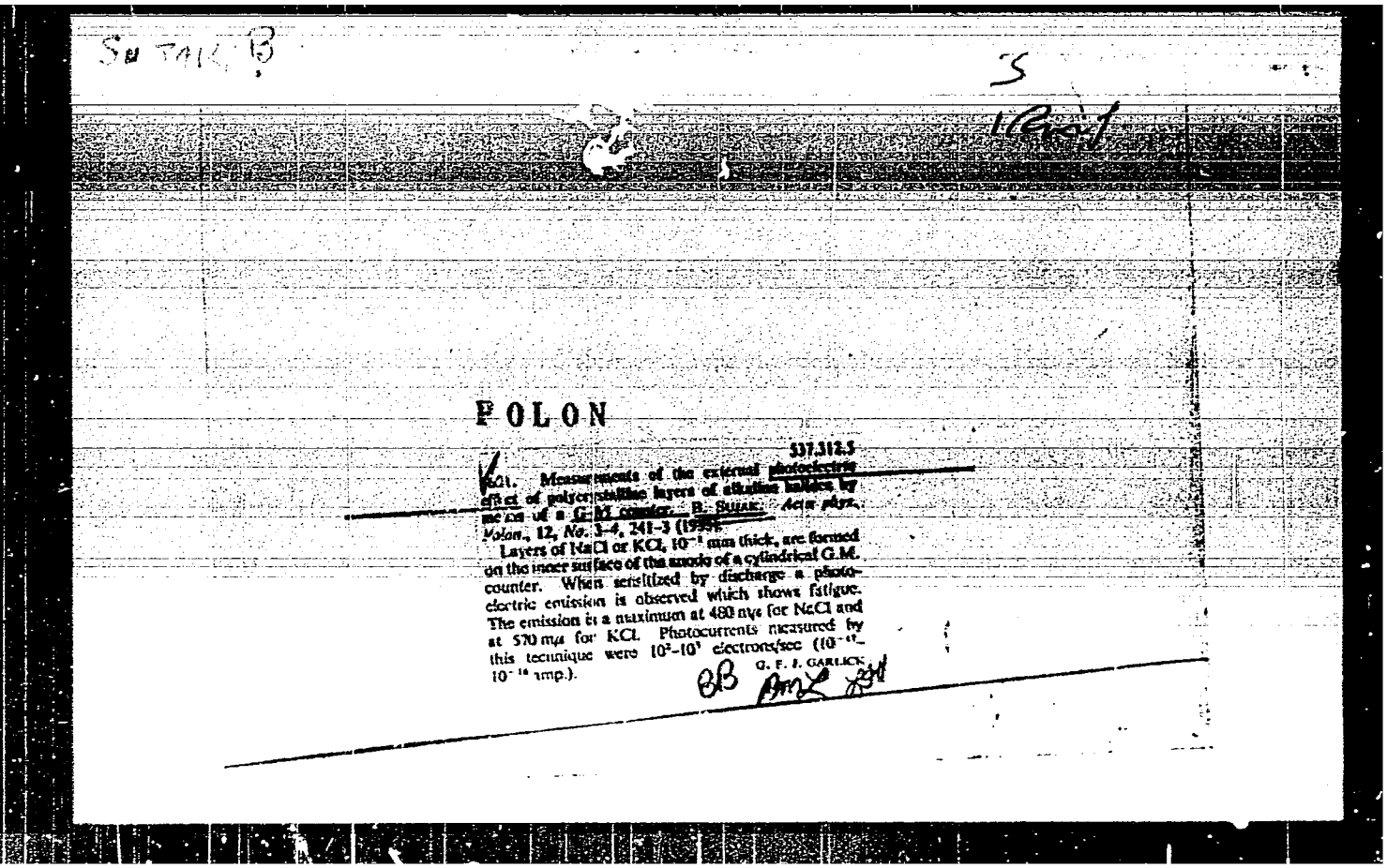
1. Institut für Physik der Polnischen Akademie der Wissenschaften, Wroclaw und Institut für Experimentalphysik der Universität, Wroclaw (for Sujak). 2. Institut für Technische Physik der Tschechoslovakischen Akademie der Wissenschaften, Prag.

BUJOK, Jozef, mgr; SUJAK, Bogdan, doc. dr

Intensity variation of gamma rays penetrating coal masses as determined by vertical loads. Przegl gorn 21 no.1:35-44 Ja '65.



The spurious counts often obtained with easily oxidized



POLON

537.312.5

6021. Measurements of the external photoelectric effect of polycrystalline layers of alkaline halides by means of a G-M counter. B. Suiac. *Acta phys. Polon.*, 12, No. 3-4, 241-3 (1953).

Layers of NaCl or KCl, 10^{-1} mm thick, are formed on the inner surface of the anode of a cylindrical G.M. counter. When sensitized by discharge a photoelectric emission is observed which shows fatigue. The emission is a maximum at 480 mμ for NaCl and at 570 mμ for KCl. Photocurrents measured by this technique were 10^{2}–10^{3} electrons/sec (10^{-17}–10^{-16} amp.).

G. F. J. GARLICK

SUJAK, B.

On the emission of photoelectrons from F-centers in NaCl. In English. p. 363

ACTA PHYSICA POLONICA vol. 14, no. 3, 1955

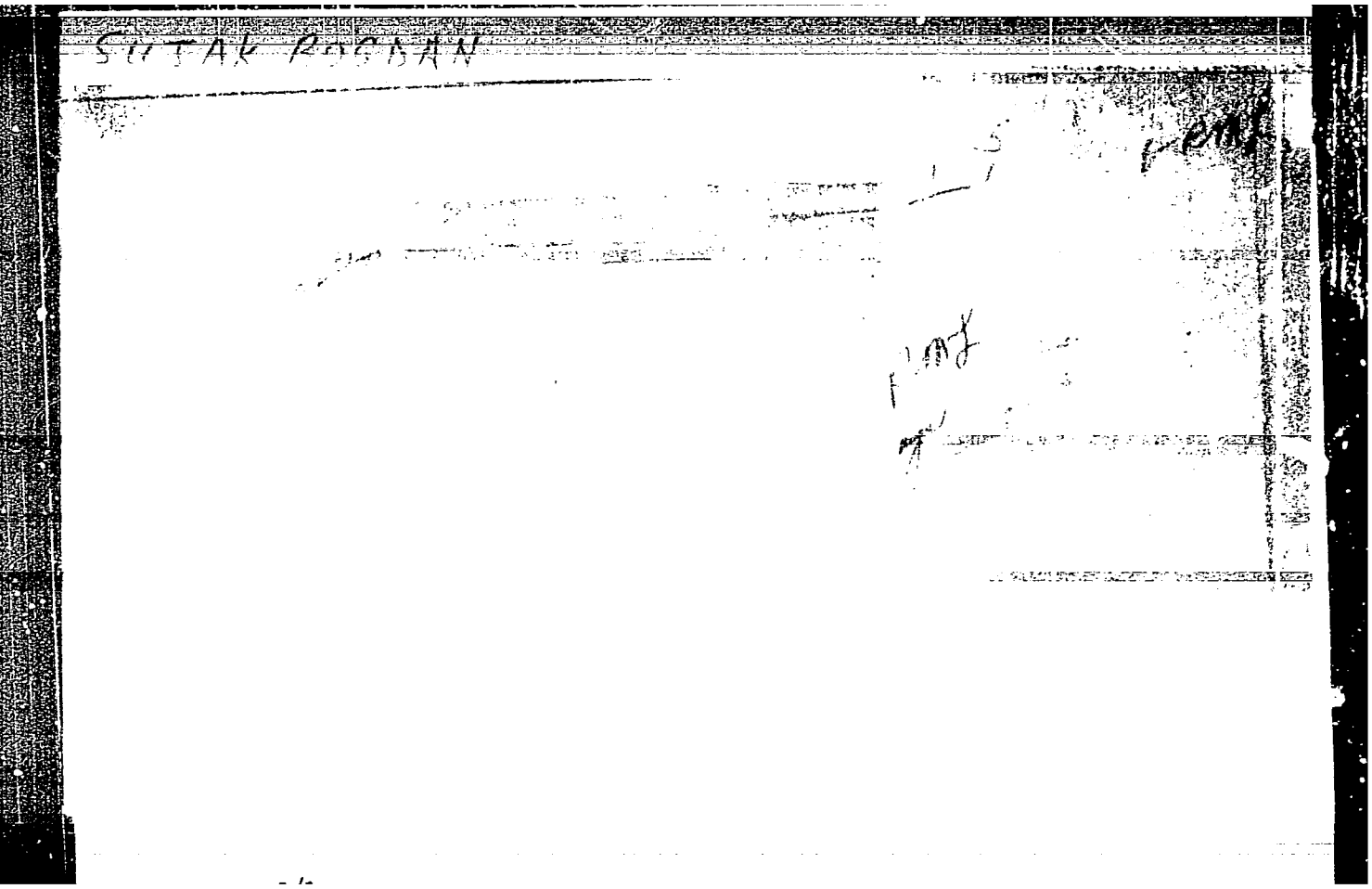
Warszawa, Poland

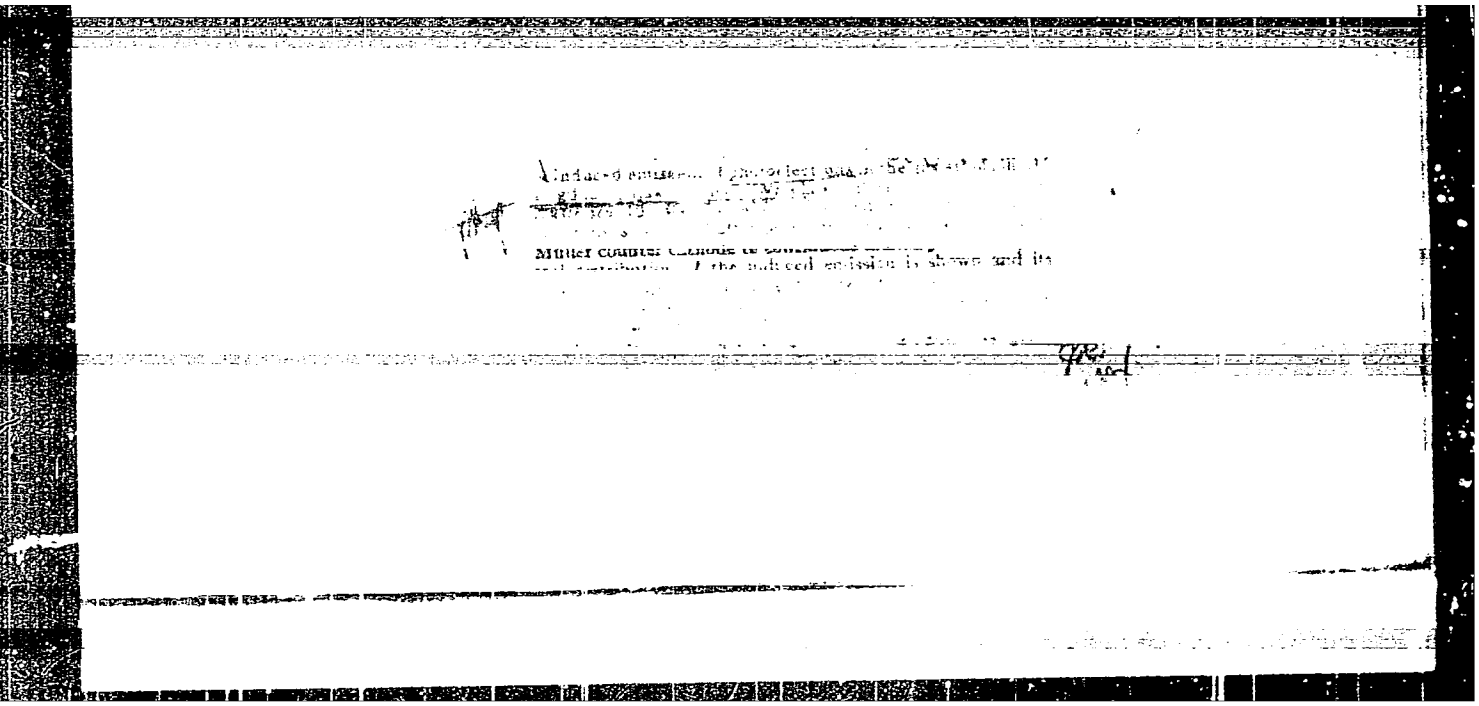
SO: EASTERN EUROPEAN ACCESSIONS LIST vol. 5, no. 10 Oct. 1956

SUJAK, B.

The retarding potential as a stabilizing factor for the working conditions of aluminum G-M counters. In English. p.489
ACTA PHYSICA POLONICA (Polska Akademia Nauk. Komitet Fizyki) Warszawa
Vol. 14, no. 6, 1955

Soviet East European Accessions List Vol. 5, No. 9 September 1956





POLAND/Nuclear Physics - Installations and Instruments. Methods of Measurement and Research C-2

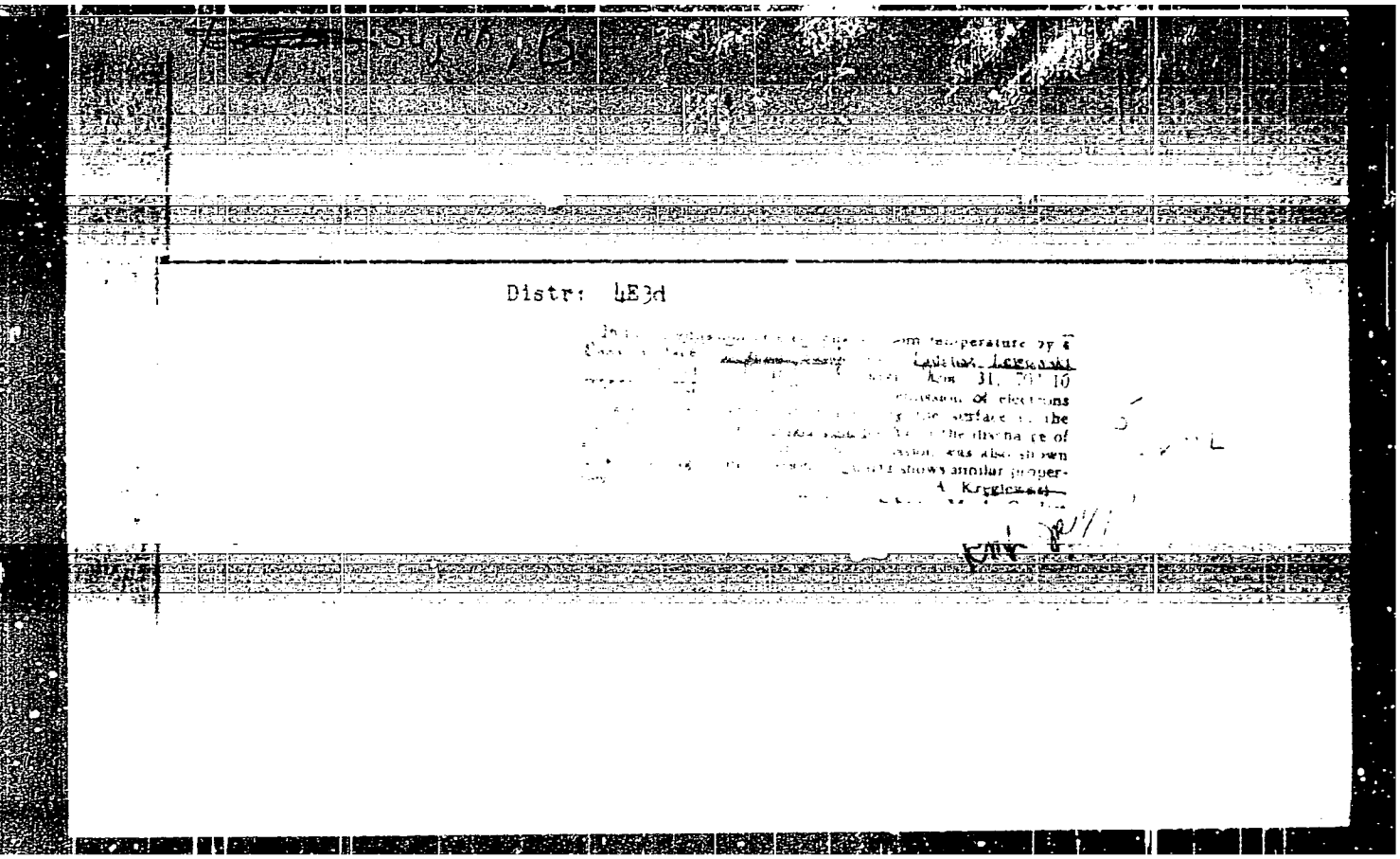
Abs Jour : Ref Zhur - Fizika, No 8, 1958, No 17354

Author : Sujak B.
Inst : Boleslaw Bierut University, Wroclaw, Poland
Title : On the Induced Reverse Response of the Oxidized Aluminum G-M Counter to the Visible Light, the Joshi Effect, and the Geiger Counter Sensitivity to the Air Flux.

Orig Pub : Acta phys. polon., 1957, 16, No 1-2, 49-62

Abstract : A study was made of the emission of photoelectrons from the cathode of a counter made of oxidized aluminum. If such a counter is first "excited,", i.e., if it is first operated with high counting rate or in a continuous discharge mode, an increase in the counter sensitivity to visible light is observed. The effect is ascribed to the appearance of color centers on the layer of aluminum oxide and to the charging of these centers by positive ions. This leads to a sharp increase in the counter background in darkness. When such a counter is exposed

Card : 1/2



Distr: 4E3d

Thermostimulated coexoelectron emission simulated by released water of crystallization. Bogdan Suiak. *Czechoslov. J. Phys.* 8, 516–17(1958)(in German).—The author investigates the influence of H_2O vapor on the counting speed of ionization counters, and shows that glow curves can be obtained which are due to release of water instead of thermoelectrons from the solid. For example, glow curves peak at temps. where the degree of dehydration of $CuSO_4 \cdot 5H_2O$, $CuSO_4 \cdot 3H_2O$, and $CuSO_4 \cdot H_2O$ are at a max. Hydrates which release the water of crystn. at one temp. exhibit only one glow curve peak, e.g., $Na_2SO_4 \cdot 10H_2O$.

A. Kremheller

SUJAK, B.

Measuring the thermostimulation-coelectron emission of exoelectrons by means of an open point counter during the evolution of water of crystallization. B. Sujak (Univ. Wroclaw, Poland). *Z. angew. Phys.* 10, 511-6(1958).—Measurements of exoelectron emission with an open point counter sometimes give wrong results, especially if water vapor or other gases are given off by the sample. Under certain conditions, however, the counter can be operated in such a way that mainly the change with time in partial pressure of water or any other gas in the vicinity of the sample is recorded. It is thus possible to obtain vapor "gle *p* curves" and study the thermal decompn. of hydrates as a function temp. The new technique can also serve to investigate desorption problems. Rudolf Nitsche

SUJAK, B.

21 6

The photostimulation of electron emission from abraded aluminum surfaces. I. Bolko, M. Pirog, and B. Sujak (Wyższa Szkoła Pedagogiczna, Opelu, Poland). *Z. Naturforsch.* 13a, 799–800(1958).—Freshly abraded Al surfaces were activated with visible light and the resultant emitted electrons counted in a graphite counter filled with Ar and EtOH vapor at low pressure. The incident light was analyzed by means of an absorption filter; a curve of electron emission as a function of incident wave length is presented. Emission was observed only at wave lengths shorter than 5000 A. The Al surfaces were shielded from the active counting vol. by a charged grid and the effects of varied grid voltage and mesh size are discussed. N. A. Frigerio

67143

21.5300
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POL/45-18-5-2/11

AUTHORS: Lewowski, T., Su[illegible], B.

TITLE: Behavior of the Open Air Point-counter at Increased Temperatures

PERIODICAL: Acta Physica Polonica, 1959, Vol 18, Nr 5, pp 411-418 (Poland)

ABSTRACT: Open air counters have not found preferable application in nuclear investigations since their operation is rather unstable. However, several earlier investigations indicated a favorable influence of a temperature raise upon the background of open counters. The present paper gives the results of the investigation of an open air point-counter with respect to temperature variation. The aim was to reduce the high operating voltage by means of heat influence and to investigate the open air point-counter, run under continuous discharge (spark counter), operating as an α-particle detector. The experimental arrangement, i.e. the counter mounted into an electric resistance heater, is shown in figure 1. Temperature variation was possible from 20 C to 500 C. At constant pressure (open counter!) the breakdown voltage is inversely proportional to gas (air) temperature (first approximation). This was confirmed by the experiment which, on the average, gave a 30 per cent reduction

Card 1/2

67144

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~~5 (4), 24 (3)~~

AUTHORS: Sujak, B., Bohun, A. POL/45-18-5-3/11

TITLE: On the Shammed Thermo-excited Coelectron Emission of Hydrates

PERIODICAL: Acta Physica Polonica, 1959, Vol 18, Nr 5, pp 419-425 (Poland)

ABSTRACT: Open-air point counters respond to crystal water (freed from the sample) with maxima of the counting rate. A sharp-pointed counter with corona discharge responds with streamers only to α-particles and steam but is not able any more to record single exo-electrons. It is, however, possible to measure the "water-glow-curves" in analogy to the exo-electron glow curves (Refs 2, 3, 4). This paper brings the results obtained by means of another device (Ref 1) at the Institute of Physical Engineering of the Czechoslovakian AS. The little sphere in the Geiger counter was replaced by an ordinary grammophone needle. Counting rate and temperature course were recorded photographically together with the shammed emission. Crystal pieces of the following hydrates were investigated: $Na_2SO_4 \cdot 10H_2O$; $BaCl_2 \cdot 2H_2O$; $Na_2S_2O_3 \cdot 5H_2O$ and $CuCl_2 \cdot 2H_2O$. A first heating of the sample gave rise to nonlinear temperature course and sharp maxima in the water glow curve (Figs 2-5) due to

Card 1/2

P/045/60/019/02/05/013
B018/B102

AUTHORS: Mader, J., Sujak, B.

TITLE: A Method of Detecting Plastic Deformations by Means of a Geiger Point Counter

PERIODICAL: Acta Physica Polonica, 1960, Vol. 19, No. 2, pp. 179-185

TEXT: The present paper contains results concerning the problem of the so-called "exo-electron" emission during or after deformation. The first result concerns the influence of a so-called internal deformation of aluminum on photo-excited electron emission. The internal deformation caused by impression of steel rods can be determined around the point of impression because of the decrease in emission intensity. Two possibilities of interpretation are discussed. The one is the development of emissive centers which diffuse from inside the sample to its surface, the other is a change in cohesion of the surface layer due to deformation. Further, results are given concerning detection of impressions in samples of polymeric substances. These measurements used the influence of triboelectricity and electric polarization occurring on pressures upon the

Card 1/2

ACC NR: AP7003278 PO/0045/66/030/006/1053/1055

AUTHOR: Rafalowicz, J.; Pega, E.; Sujak, B.

ORG: [Rafalowicz] Low Temperature Laboratory, Institute of Physics, PAN, Wroclaw (Zyklad Niskich Temperatur, Instytut Fizyki PAN); [Pega, Sujak] Chair of Experimental Physics, Wroclaw University, Wroclaw (Katedra Fizyki Doswiadczalnej, Uniwersytet Wroclawski)

TITLE: On the possibility of the use of technical polycrystalline silicon in low-temperature thermometry (helium temperatures)

SOURCE: Acta physica polonica, v. 30, no. 6, 1966, 1053-1055

TOPIC TAGS: thermometry, low temperature research, silicon, polycrystalline silicon, resistance thermometer, temperature dependence, electric resistance

ABSTRACT: The temperature dependence of the electrical resistance of commercially pure silicon was measured at 4.22—1.8K to study the feasibility of constructing silicon thermometers for this region. Resistance as a function of the temperature for a silicon sample is given in Fig. 1. The samples were calibrated by immersion in a liquid helium bath and temperature was controlled with better than 0.01K accuracy by pumping off helium gas. The experimental function R(T) can be approximated by

$$R = R_0 \cdot e^{\frac{B}{T}} \qquad (1)$$

Card 1/3

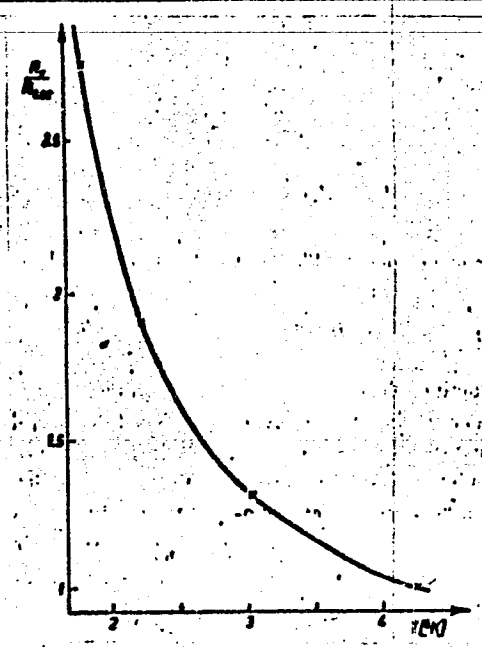

Figure 1. Relative resistance of a silicon sample versus temperature. (R_T is the resistance at the temperature T, $R_{4.22}$ — the resistance of the boiling point of helium)

ACC NR: AP7003278

B being approximately constant between 3K and 1.8K and decreasing between 3 and 4.2K. Extrapolation of the calibration curve indicated the possibility of using the silicon thermometer to 0.6K, where resistance would reach the order of 10^4 ohms. Orig. art. has: 1 figure and 1 formula. [26]

SUB CODE: 20,14/ SUBM DATE: 23Jun66/ ORIG REF: 002/ OTH REF: 004/ SOV REF: 003
ATD PRESS: 5114

Card 3/3

S/263/62/000/005/006/010
I007/I207

Authors: Lewowska, Ludmiła, Lęwowski, Tadeusz, and Sujak Bogdan

Title: THE INFLUENCE OF FILAMENT TEMPERATURE OF AN OPEN-AIR DISCHARGE COUNTER ON THE DISRUPTIVE VOLTAGE OF THE CORONA

Periodical: *Referativnyy zhurnal, Mashinostroyeniye*, no. 5, 1962, 63, abstract 32.5.349 (In "*Zesz. nauk. Politechn. wroclawsk*", no. 41, 1960 67–74)

Text: Detailed description of methods and experimental results. It is shown that for a filament made of easily oxidating metals and alloys (W, constantan, etc.) the minimum disruptive voltage in case of a positive corona discharge, corresponds to a temperature of 750°C, and for molybdenum filaments, to 500°C. In the case of platinum, tested for temperatures up to 1300°C, no minimum voltage could be noticed. For negative corona discharges, such a minimum disruptive voltage was also absent. The appearance of a minimum voltage with the increase in temperature is explained by formation of a negative charge as a result of thermionic electron emission from the filament surface. It is suggested to use the open-air discharge counter with heated filament (hot-wire) to record alpha particles or neutrons, since the device is insensitive to atmospheric humidity. There are 5 figures and 10 references.

[Abstractor's note: Complete translation.]

Card 1/1

SUJAK, B.

Photostimulated emission of exoelectrons from the surface layer of amphoteric metals reacting with concentrated NaOH or KOH. J. Wawrzyniak and B. Sujak (Univ. Wrocław, Poland). *Nature* 186, 467(1960).—Investigations have shown that amphoteric metals, such as Al, Zn, and Sn, as well as brass and some soldering alloys contg. Sn, give relatively strong emission of exoelectrons when irradiated with visible light, after the freshly abraded surface is sprayed with concd. NaOH or KOH. Al produces this effect even when not abraded. The intensity of the emission decreases with the thickness of the NaOH or KOH layer. The effect was not due to the exothermic character of the reactions, because no emission was observed from abraded specimens treated with concd. HCl. Mg, which is a strong emitter of exoelectrons under visible light, shows a decrease in emission intensity when sprayed with concd. NaOH or KOH. Harry E. Pattee

LEWOWSKI, T.; SUJAK, B.

Influence of liquids upon the tribostimulation of aluminum for phostostimulated exoelectron emission. Acta physica Pol 20 no.2:119-127 '61.

1. Institut für Experimentalphysik der Universität, Wroclaw (for Lewowski)). 2. Institut für Experimentalphysik der Universität Wroclaw, und (zur Zeit) The Clarendon Laboratory, Oxford (for Sujak).

25144
P/045/61/020/005/007/008
B133/B212

243500

AUTHORS: Sujak, B. and Wawrzyniak, J.

TITLE: Photo-stimulated emission of exo-electrons from the surface layer of amphoteric metals reacting with sodium hydroxide or potassium hydroxide

PERIODICAL: Acta Physica Polonica, v. 20, nos. 5-6, 1961, 463-469

TEXT: The present paper deals with the emission of exo-electrons accompanying chemical reactions occurring between processed surfaces of amphoteric metals and concentrated NaOH or KOH solutions if the reacting surface is illuminated with white light. The authors' discovery has been published in "Nature". The reader is referred to the detailed review of the problem published recently by Roikh, I. L. and Yarpovyetsky, L. Y. (Uspekhi Khimii, 2, 168 (1959)). The measuring device consisted of a point counter (1.4 cm diameter) closed with a metal grid. The light source consisted of a 6v/50 w tungsten bulb with glass condenser and interference filters. Newly abraded surfaces of Al, Zn, Sn, Pb, commercial Cd, brass, and soldering alloys (the last three because of their Sn content) showed a great increase

Card 1/5

Photo-st ılated emission of ...

The authors think that an effect of this kind could also be obtained for Sb by using light of shorter wavelengths. A more detailed investigation is proceeding. There are 3 figures and 11 references: 4 Soviet-bloc and 7 non-Soviet-bloc. The three most important references to English-language publications read as follows: Mader, J. and Sujak, B., Acta phys. Polonica 19, 179, (1960); Sujak, B., Brit. J. appl. Phys., 10, 102, (1959b); Wawrzyniak, J. and Sujak, B., Nature, 186, 467 (1960).

ASSOCIATION: Institute of Physics, Polish Academy of Sciences, Wrocław, Chair of Experimental Physics of the University, Wrocław

SUBMITTED: December 7, 1960

Card 3/5

P/045/61/020/011/002/004
B102/B108

AUTHOR: Sujak, B.

TITLE: Further experiments to the problem of exoelectronic emission of deformed aluminum

PERIODICAL: Acta Physica Polonica, v. 20, no. 11, 1961, 889 - 902

TEXT: Small, 2 mm thick aluminum plates and 3 - 4 mm thick single crystals were subjected to plastic deformation (steady and nonsteady). For the measurements a special bending machine was constructed in which a point counter was mounted in such a way that it was right above the bent part of the specimen. This part was illuminated by a tungsten bulb whose light passed through the counter. The counter recorded the exoelectronic emission during and after bending. From the specimens which were bent at a constant rate, exoelectronic emission started only after a certain degree of deformation was reached. This degree depended on the surface properties. Specimens with oxide and shellac coatings differed considerably in their behaviors. The steepness of increase of light-induced exoelectronic emission during bending is proportional to the light intensity.

Card 1/3

Further experiments to the...

Discontinuous bending led to a special effect: If the specimen was thermally treated exoelectronic showers were recorded. Single crystals as well as Al sheet showed such an effect when they were annealed not too long, and they were bent right after heat treatment. The showers from Al sheet an after annealing for 10 min in air at 500°C were found to have the highest intensities. This is ascribed to more complete and thicker oxide films. Stepwise bending has to be carried out in short and rapid steps. Bending steps that lasted more than 10 sec (0.5 mm) yielded no showers. When bending caused a rupture, the emission intensity was found to be proportional to the acting force, first increasing and then dropping jump-like with it after rupture. The initial intensity (amplitude) of an exoelectron shower can be described by $(N/t)_D \sim \dot{D}D^2$, where $\dot{D}$ takes account of the dislocative motion and D^2 of the formation of vacancies. When both contributions are about equal, $(N/t)_D \sim D \cdot Dv$. Grunberg and Wright have also found that emission intensity is proportional to the third power of the degree of deformation. There are 13 figures and 16 references: 4 Soviet-bloc and 9 non-Soviet-bloc. The four references to English-language publications read as follows: Ramsey, J. A. Nature,

Card 2/3

30970
P/045/61/020/012/001/004
B137/B104

9,3120 (1003,1138,1160,1331)

AUTHOR: Sujak, B.

TITLE: Electron trap analysis with the aid of exoelectron emission

PERIODICAL: Acta Physica Polonica, v. 20, no. 12, 1961, 969 - 982

TEXT: Three methods are proposed for electron trap analysis: (1) analysis of decay curves (postelectron emission); (2) analysis of the emission current of exoelectrons measured while the specimen is being heated by a constant temperature increase (thermostimulated coelectron emission, glow curve analysis); (3) analysis of the intensity of exoelectron emission as a function of the wavelength of the illuminating light reduced to equal incident light energy (photostimulated coelectron emission). The post-electron emission is discussed with the aid of Nassenstein's theory (Nassenstein, H., Z.-Naturforsch., 10a, 944 (1955)). The glow curve method reveals certain maxima on the exoelectron intensity curve. If these peaks are distinctly separated, the relevant traps can be analyzed. The types of traps are characterized by their energy depth. For thermo-stimulated exoelectron emission it is equal to the thermal activation energy required for untrapping an electron. Results obtained for alkali

Card 1/4

Electron trap analysis with...

halides indicate that the work function hardly affects the peak temperature but has a strong effect on the intensity of exoelectron emission. Two mechanisms proposed by Seidl (Seidl, R. Czech. J. Phys., B10, 931 (1960)) are discussed, one corresponding to surface emission and the other to an internal mechanism, e. g., electron transfer from the trap to the conduction band. The work function is almost insignificant in this case. The results have shown that for Na and K halides with F centers the emission seems to be caused by the internal process. Trap analysis with the aid of photostimulated coelectron emission can be carried out using the decay curves obtained during illumination and measurement results of the spectral quantum yield of KCl layers excited to emit exoelectrons. If the thermal energy of the lattice is to make a contribution to the electron emission, the portion of energy imparted to the individual electrons must be equal to the work function for KCl which is about 0.5 - 0.8 ev. The thermal activation energy was estimated at about 0.6 ev. A comparison of measurements of postelectron emission and photostimulated coelectron emission shows the same shape for both curves. This indicates that the same types of traps act in both cases. Since the work function for the electron is largely dependent on the surface condition, measurements have always to be made under equal conditions in order to obtain comparable

Electron trap analysis with...

results. Excess charge on the surface causes a bending of the energy bands. The optimum emission depth for an electron varies from 10^{-4} to 10^{-5} cm. Since the emission of exoelectrons from the depth is caused only by an internal process, i. e., transfer of the electron to the conduction band, the work function is insignificant. Bohun, A. (Czech. J. Phys., 4, 139 (1954); Acta phys. Hungarica, 8, 65 (1957); Bohun, A., Dolejsi, J., Czech. J. Phys., 9, 578 (1959), Bohun et al., Czech. J. Phys., B10, 349 (1960)), Arsen'yeva-Geyl', A. N. (Vneshniy Fotoeffekt s Poluprovodnikov i Dielektrikov, Moscow 1957), Joffe, A. F., (Półprzewodniki w fizyce współczesnej, Warsaw 1956, Polish Translation from Russian), Matyás, M. (Czech. J. Phys., 7, 277 (1957)), Vol'kensteyn, F. F., (Elektronnaya teoriya kataliza na poluprovodnikakh, Moscow 1960), and Szaynok, A., (Dissertation, University in Wrocław, 1960) are mentioned. There are 9 figures and 23 references: 14 Soviet-bloc and 9 non-Soviet-bloc. The four references to English-language publications read as follows: Apker, L., Taft, E., Phys. Rev., 79, 964 (1950); 81, 698 (1951); Mott, N. F., Gurney, R. W., "Electronic Processes in Ionic Crystals", Oxford 1950; Randall, J. T., Wilkins, M. H. F., Proc. Roy. Soc. (London), A184, 366 (1945)a; A184, 390 (1945)b; Seitz, F. "Modern Theory of Solids" 1940.

Card 3/4

5.5800 ,

P/045/62/022/002/001/002
B102/B186

AUTHOR: Sujak, B.

TITLE: Air point counters applied to exoelectron detection

PERIODICAL: Acta Physica Polonica, v. 22, no. 2(8), 1962, 137 - 149

TEXT: Open Geiger point counters are partioularly suitable for exoelectron detection by reason of their sensitivity (10^{-20} amp). Their construction and the most important features are here described. Counting rates of 10^3-10^4 pulses/sec can be achieved by the simultaneous use of an amplifier having an amplification factor of 10^4-10^5 and a well stabilized high-voltage unit. The counter is heated in order to eliminate the disturbing effect of air moisture. The author recommends using a circulating water of 35-60°C. When nonmetals are investigated, the case containing the point should be shielded by a copper mesh so as not to be affected by charging of the dielectric surface. If the sample is heated, a close mesh has to be used in order to avoid convection. This may also serve to decide whether there are in fact exoelectrons or e. g. field distortions

Card 1/2

44355

P/045/62/022/005/007/009
B188/B186

21,2300

AUTHORS: Bujok, J., and Sujak, B.

TITLE: γ-ray absorption changes in graphitized carbon as effect of a pressure applied

PERIODICAL: Acta Physica Polonica, v. 22, no. 5(11), 1962, 435 - 437

TEXT: It is investigated how the absorption of γ-radiation in a lump of graphitized carbon depends on an external pressure. The pressures applied varied from zero to 26.8 kg/cm^2. Cs^{137} is used as radiation source and a Geiger-Müller counter as radiation detector. The measured result is given in figure 2. It is shown that the absorption capacity also depends on whether the sample had been exposed to pressure before the measurement. This is explained by irreversible deformations inside the sample caused by the preceding compression stress. There are 2 figures.

ASSOCIATION: Hauptinstitut für Bergbauwesen, Katowice (J. Bujok); (Main Institute of Mining, Katowice); Institut für Experimentalphysik, Universität zu Wrocław und Hauptinstitut für Bergbauwesen, Katowice (B. Sujak) (Institute of Experimental Physics, University of Wrocław Main Institute of Mining, Katowice)

Card 1/2

μR0/cm·J

LEWOWSKA, L.; SUJAK, B.;

Ultraviolet luminescence of an aluminum oxide layer during its electrolytic formation. Acta physica Pol 23 no.1:13-21 Ja '63.

1. Department of Physics, Technical University, Wroclaw (for Lwowska). 2. Department of Experimental Physics, University, Wroclaw (for Sujak).

L 17176-63 EWT(1)/BDS AFFTC/ASD P/0045/63/023/004/0431/0438

ACCESSION NR: AP3001743

AUTHOR: Stepniowski, Ignacy; Sujak, Bogdan

TITLE: Point air-flow counter as an exo-electron detector

SOURCE: Acta physica polonica, v. 23, no. 4, 1963, 431-438

TOPIC TAGS: exo-electron, exo-electron emission, exo-electron detector, point air-flow counter, geiger counter

ABSTRACT: In measuring exo-electron emissions a Geiger air counter requires a linear amplifier with large amplification factor of the order of 10^5 due to the small pulse amplitude produced. If, though, the vapors of some organic or inorganic liquids are pumped through the point air counter, the counter reacts with relatively large pulses (averaging about 2V, depending on the type of vapor), to electrons and slow negative ions, which can be recorded without difficulty. One can also choose a vapor of a liquid whose influence on exo-electron emission is of particular interest to the investigator because of the catalytic decomposition of the vapor on the surface of the investigated sample or contact. Vapors of ethyl alcohol, n-propyl alcohol, n-butyl alcohol and dioxane were used in

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L 17176-63
ACCESSION NR: AP3001743

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this work to study the behavior of the point air counter. Details of the counter used, preparatory steps, operating characteristics and detection of exo-electrons are given. A schematic of the counter is given in Enclosure 01. It follows from these experiments that the point flow counter is quite suitable for recording exo-electrons and can be of great service in investigation of their emission. Background noise can be greatly reduced and only standard, commercial counting circuits need be used. Such a counter has already been used for preliminary investigation of the effect of an external electric field on exo-electron emission from alkali halides. Orig. art. has: 1 figure and 7 graphs.

ASSOCIATION: Katedra Fizyki Wyzszej Szkoly Pedagogiczney w Opolu (Department of Physics, Opole Pedagogical College); Katedra Fizyki Doswiadczalnej Uniwersytetu Wroclawskiego (Department of Experimental Physics, University of Wroclaw)

SUBMITTED: 02Jun62 DATE ACQ: 05Jun63 ENCL: 01

SUB CODE: PH NO REF SOV: 001 OTHER: 023

Card 2/2

L 10084-63 BDS
ACCESSION NR: AP3003569 P/0045/63/02[illegible]/006/0715/0786

AUTHOR: Sujak, B.; Heffner, W.

TITLE: On the dielectric corona motor

SOURCE: Acta physico polonica, v. 23, no. 6, 1963, 715-725

TOPIC TAGS: dielectric corona motor, electrostatic corona motor, electrostatic motor

ABSTRACT: A new type of electrostatic motor, first discovered by Sujak (1959) and later studied by Karpov (1960) and Van Wyk and Kuhn (1961), is further investigated to establish more closely its operating characteristics. The basic elements of the motor comprise a thin plexiglass disk rotor of about 3 to 10 cm in diameter and one or more pairs of oppositely polarized electrode points suspended radially off the periphery and in the plane of the disk. In tests the electrodes were under a d-c potential of 4 to 8 kv or more. The motor requires an initial mechanical start to set it in motion in either direction, whereafter the disk tends to increase its speed in that direction up to a certain maximum, which depends largely on the voltage applied to the points. The dimensions of the rotor, the arrangement and polarization of the points, the temperature, and most of all the

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ACCESSION NR: AP3003569

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polarization of the rotor are among the other factors affecting the operation of the motor. A tangential instead of radial arrangement of at least one pair of the points caused the rotor to start by itself in a definite direction and also to achieve a higher speed in that direction. The behavior of the motor when immersed in transformer oil is among the characteristics subject to further investigation. Orig. art. has: 14 figures.

ASSOCIATION: Institute of Experimental Physics, Wroclaw University; Department of Physics, Pedagogical College of Opole

SUBMITTED: 17Sep62 DATE ACQ: 23Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 00 OTHER: 004

Card 2/2 ph/(M)

SUJAK, I.; GASIOR,S.; STEPNEWSKI, W.

On the effect of an external electric field on the emission of electrons from additively colored KCl into a gaseous atmosphere. Pt.1. Acta physica Pol. 24 no.1:51-63 Jl'63.

1. Institute of Experimental Physics, University, Wroclaw (for Sujak). 2. Chair of Physics, Medical Academy, Wroclaw (for Gasior and Stepniewski).

BUJOK, Jozef, mgr; SUJAK, Bogdan, doc. dr

Usefluness of basic physical and physicochemical studies on coal. Przegl gorn 20 no. 2: 71-74 F '64.

IJP(c)/AS mp -2/

ACCESSION NR: AP4045519 P/0045/63/024/001/0051/0061

AUTHOR: Sujak, B.; Gasior, G.; Stepniewski, W.

... the emission

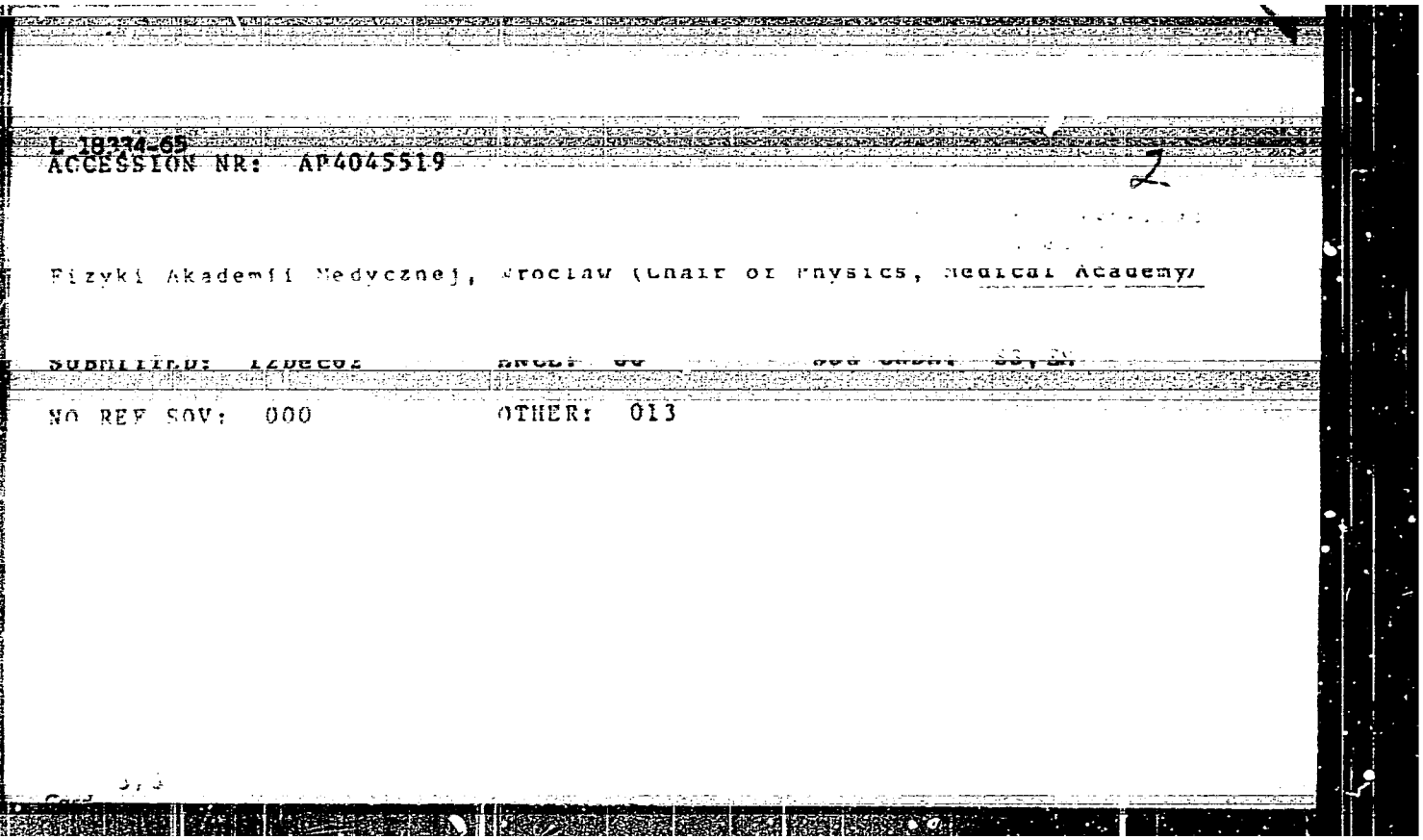
... and intensity of photoelectron emission from additively

9

-140 v were

... to the lower plate (specimen support). The time dependence ... measured in single

... those obtained with powdered specimens.



L 18234-65
ACCESSION NR: AP4045519

Fizyki Akademii Medycznej, Wroclaw (Chair of Physics, Medical Academy)

SUBMITTED: 12Dec62 ENCL: 00 SUB CODE: GP

NO REF SOV: 000 OTHER: 013

Card 3/3

GIKROSZYNSKI, A.; MADER,J.; SUJAK,B.

Photostimulated exoelectron emission as depending on the thickness of the surface layer in plastic processing of oxidized aluminum. Acta physica Pol. 25 no.1:3-6 Ja '64

1. Institut für Experimentalphysik der Universität, Anstalt für Induzierte Elektronenemission, Wroclaw.

RAFALOWICZ, J.; SUJAK, B.

Characteristics of standard carbon resistors at helium temperatures and their dependence on the measuring current intensity. Acta physica Pol 25 no.2:193-203 F '64

1. Low Temperatures Laboratory, Institute of Physics, Polish Academy of Sciences, Wroclaw.

ACCESSION NR: AP4024334 P/0045/64/025/002/0247/0253

AUTHOR: Gasior, S.; Stepniewski, W.; Sujak, B.

TITLE: Effect of an external electric field on photostimulated exoelectron emission from additively colored NaCl into a gaseous atmosphere

SOURCE: Acta physica polonica, v.25, no. 2, 1964, 247-253

TOPIC TAGS: external electric field, photostimulated exoelectron emission, additively colored NaCl, gaseous atmosphere, emission decay curve, emission intensity, NaCl

ABSTRACT: The paper is a continuation of a previous study (Acta Phys. Polon., 23, 51,1963) on the effect of an external electric field on the photostimulated emission of exoelectrons from alkali halogenides. It describes the measuring procedure used in studying the dependence of such emission from NaCl single crystals colored additively in sodium vapor versus the accelerating voltage. The measurements produced graphs of the emission decay curves with time at constant voltage, showing three relationships between the decay constants $\lambda_1, \lambda_2, \lambda_3$ and the accelerating voltage applied, U:

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$$\lambda_1 = 1.3 - 93 \times 10^{-3} \sqrt{U} \quad \text{for } 0 < U \leq 190 \text{ V},$$
$$\lambda_2 = 09 - 25 \times 10^{-7} U^2 \quad \text{for } 0 < U \leq 190 \text{ V},$$
$$\lambda_3 = 0.0089 - 15 \times 10^{-6} U^2 \quad \text{for } 0 < U \leq 200 \text{ V}.$$

In measurements with accelerating voltages exceeding approximately 200 V (distance 0.5 cm), λ_1 assumed negative values, causing the emission intensity to increase with time during the initial phase of observation. It was found in all cases that, under the given conditions, an initial increase of the emission intensity does indeed occur on illuminating the specimen with natural light, -- a clear proof of the influence of an external accelerating field on the shape of the decay curves. This effect should be taken into account since it can give rise to enormous non-reproducibility in investigations of excited electron emission. Orig. art. has: 8 figures and 6 equations

ASSOCIATION: Uniwersytet Wroclawski, Zaklad Wzbudzonej Emisji Elektronow przy Katedrze Fizyki Doswiadczalnej (Wroclaw University, Department of Induced Electron Emission, Chair of Experimental Physics)

Card 2/2

RAFALOWICZ, J.; SUJAK, B.

Calibration formulas of standard carbon resistor thermometers for the helium temperature range. Acta physica Pol 25 no. 4: 599-608 Ap '64.

1. Low Temperature Laboratory, Institute of Physics, Polish Academy of Sciences, Wroclaw.

BUJOK, J.; SUJAK, B.

Change of intensity of penetrating gamma radiation in a homogeneous carbon substance as a magnitude function of vertical pressure. Acta physica Pol 25 no.5:683-693 My '64.

1. Institute of Mining, Katowice (for Bujok). 2. Department of Experimental Physics, Wroclaw University (for Sujak).

L 21636-66 EWP(t)/EWP(k) IJP(c) JD/AM/AT SOURCE CODE: PO/0045/65/028/001/0031/0043

ACC NR: AP5022619

AUTHOR: Sujak, B; Gieroszynski, A.; Mader, J.

ORG: Laboratory of stimulated Electron Emission, Institute of Experimental Physics, Wroclaw University (Zaklad Wzbudzonej Emisji Elektronow przy Kateurze Fizyki Doswiadczalnej Uniwersitetu Wroclawskiego)

TITLE: Effect of ion counter generated ions on the kinetics of photostimulated exoelectron emission from plastically deformed aluminum

SOURCE: Acta physica polonica, v. 28, no. 1, 1965, 31-43

TOPIC TAGS: plastic deformation, deformation rate, aluminum, electron emission, parameter, geiger counter, ion, ionization counter

ABSTRACT: Photostimulated exoelectron emission as recorded in gases and accompanying plastic deformation of aluminum is known to exhibit various kinetics according to the experimental conditions. By consecutive elimination, the effect of essential parameters, thus the light stimulating emission, the accelerating voltage between the specimen and grid cathode of the counter, and the working voltage of the counter itself, was investigated. The initial intensities of emission $(N/t)_{0,i}$ on reintroducing a given parameter into the recording system were found to depend markedly on the time $t_{w,i}$ during which the parameters in question had been eliminated

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L 21606-66
ACC NR: AP5022619

$$\left(\frac{N}{t}\right)_{0,i} = e^{-c_i\sqrt{t_{w,i}}+d_i} \quad c_i, d_i = \text{const}$$

for elimination of the light stimulating emission.

$$\left(\frac{N}{t}\right)_{0,i} = e^{-c_i\sqrt{t_{w,i}}+d_i} \quad c_i, d_i = \text{const}$$

for elimination of the accelerating voltage U_s

$$\left(\frac{N}{t}\right)_{0,i} = k_i \frac{1}{1+t_{w,i}^{m_i}} \quad k_i, m_i = \text{const}$$

for the case of elimination of the working voltage U_1 of the counter. The experimental results point to ions generated in the active volume of the counter as a factor able to affect the emission kinetics essentially when applying an ion counter for research work in gases and choosing the parameters inadequately, as e.g. excessively intense stimulating light or too high accelerating voltage. Orig. art. has: 4 formulas and 18 figures. [Author's abstract.]

SUB CODE: 11, 20 SUBM DATE: 30Nov64/ OTH REF: 017/ [illegible]

Card 2/2

L 21299-66 EWP(e)/EWP(t)/EWP(k) IJP(c) JD/AW/HW

ACC NR: AP5022620 SOURCE CODE: PO/0045/65/028/001/0061/0071

AUTHOR: Sujak, B.; Gieroszynski, A.; Pega, E.

ORG: Laboratory of Stimulated Electron Emission, Institute of Experimental Physics, Wroclaw University (Zaklad Wzbudzonej Emisji Elektronow przy Katedrze Fizyki Doswiadczalnej, Uniwersytetu Wroclowskiego)

TITLE: Effect of oxide barrier layer and measuring parameters on the initial deformation ε_0 yielding photostimulated exoelectron emission in vacuum from plastically deformed aluminum

SOURCE: Acta physica polonica, v. 28, no. 1, 1965, 61-71

TOPIC TAGS: plastic deformation, deformation rate, aluminum, electron emission, parameter, oxide, specialized coating

ABSTRACT: The paper deals with induced photostimulated emission of electrons (Exoelectrons) accompanying plastic deformation of aluminum in vacuum. Emission intensity was measured with a 15-stage Allen-type electron multiplier with Cu-Be dynodes. In vacuum of 10^{-5} mm Hg, plastic deformation of aluminum was found to be accompanied by photostimulated emission of electrons whose intensity grew with the deformation up to the failure of the specimen, when emission decayed with time. The kinetics of emission, both during deformation and subsequent to it, resembles that of exoelectron emission into an atmosphere of air. The value of the initial deformation, ε_0 at which exoelectron emission sets in, is shown to depend on the

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L 21299-66

ACC NR: AP5022620

following factors: a) the thickness D of the oxide barrier layer coating the aluminum specimen; b) the external accelerating field strength E; c) the intensity I of the light beam stimulating emission; d) the time θ during which the specimen had been annealed; and e) the time of ageing subsequent to heating. The results show that the electrically charged walls of the micro-cracks in the oxide layer coating the metal are the factor controlling the emission from the transitional metal-oxide layer. Orig. art. has: 10 figures and 10 formulas. [Author's abstract.]

SUB CODE: 11,20 SUBM DATE: 31Dec64/ OTH REF: 014/

Card 2/2

L 21294-66 EWP(e)/EWP(t) IJP(c) JD/WW/WH
ACC NR: AP5024613 SOURCE CODE: PO/0045/65/028/003/0311/0327

60

AUTHOR: Gieroszynski, A.; Sujak, B. B

ORG: Laboratory for Induced Electron Emission, Institute of Experimental Physics, Wroclaw University (Zaklad Wzbudzonej Emisiji Elektronow przy Katedrze Fizyki Doswiadczalnej, Uniwersyte Wroclaski)

TITLE: Exoelectron emission in vacuum in the absence of light during plastic deformation of aluminum thickly coated with oxide 15,44,55

44,55 27 44,55,14 27

SOURCE: Acta physica polonica, v. 28, no. 3, 1965, 311-327

TOPIC TAGS: plastic deformation, aluminum, deformation rate, electron emission, oxide, electric field

ABSTRACT: The investigation dealt with exoelectron emission in vacuum in the process of plastic deformation of aluminum coated with a thick (over 50 mμ) barrier layer of electrolytic oxide. Deformation was found to be accompanied by electron emission also in the absence of light. According to the thickness of the oxide layer, one sharp maximum on the curve of N/t (ε) was found at a deformation ε of about 1 to 2% and another maximum β on the same curve at a deformation ε of 3 to 4%. The maximum β is higher and more diffluent. The height and shape of the two maxima of the N/t (ε) curve do not depend on the stimulating light and appear also in the dark. It is shown that their height is affected by: a) the thickness of the layer D,

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L 21294-66
ACC NR: AP5024613

b) the external accelerating field strength E, c) the rate of deformation de/dt, and d) the procedure employed in preparing the samples. Non-light-stimulated exoelectron emission appearing in the process of deformation of aluminum coated with a barrier layer of electrolytic oxide is considered as emission from the oxide layer itself. It seems to originate under the effect of an electric field of strength $E_0 \sim 10^7$ V cm^{-1} in micro-chinks arising during plastic deformation and cracking of the oxide layer. Orig. art. has: 17 figures and 12 formulas. [Author's abstract.]

SUB CODE: 11, 20 SUBM DATE: 09Feb65/ ORIG REF: 007/ OTH REF: 010/ SOV REF: 003/

Card 2/2 FV

L 21295-66 EWP(e) WW/WH

ACC NR: AP5024614 SOURCE CODE: PO/0045/65/028/003/0329/0335

AUTHOR: Bujak, B.; Gieroszynski, A.; Gajda, ...

ORG: Laboratory for Induced Electron Emission, Institute of Experimental Physics, Wroclaw University (Zaklad Wzbudzonej Emisiji Elektronow przy Katedrze Fizyki Doswiadczalnej, Uniwersytet Wroclawski)

TITLE: Effect of oxide and of measuring parameters on the decay of photostimualted (exo)electron emission in vacuum from plastically deformed aluminum (I)

SOURCE: Acta physica polonica, v. 28, no. 3, 1965, 329-335

TOPIC TAGS: plastic deformation, deformation rate, aluminum, electron emission, oxide, electric field, space charge

ABSTRACT: The process of decay of photostimulated exoelectron emission in vacuum, as measured subsequent to plastic deformation (distention) of aluminum, is considered. The tangent to the emission decay curve log N/t (t) at points near t = 0 is shown to depend on such factors as: a) the thickness of the oxide layer D, b) the external electric field E accelerating electrons, c) the intensity I of light stimulating emission, d) the procedure applied in preparing the samples. The value of the tangent (steepness) of the curve N/t (t) in the point t = 0 is considered as a quantity characterizing the rate of decay of emission. It is found that the rate of decay of emission depends on factors opposing the outflow of

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L 21296-66 EWP(e)/EWP(t) IJP(c) JD/WW/WH

ACC NR: AP5024615 SOURCE CODE: PO/0045/65/028/003/0337/0342

AUTHOR: Gieroszynski, A.; Sujak, B. 16 69

ORG: Laboratory for Induced Electron Emission, Institute of Experimental Physics, Wroclaw University (Zaklad Wzbudzonej Emisiji Elektronow przy Katedrze Fizyki Doswiadczalnej, Uniwersitet Wroclawski) 7,55

TITLE: Effect of oxide and measuring parameters on the decay of photostimulated (exo)electron emission in vacuum from plastically deformed aluminum (II) 14,55 27

SOURCE: Acta physica polonica, v. 28, no. 3, 1965, 337-342

TOPIC TAGS: plastic deformation, deformation rate, aluminum, electron emission, oxide, electric field, space charge

ABSTRACT: From considerations relating to the electrically charged walls of microchinks in the oxide layer on plastically deformed aluminum in vacuum, a dependence between the decay constant of the first component and the measuring parameters is derived. The steepness ($tg\alpha$) of the tangent to the curve in a point t near $t = 0$ is considered. It is easily shown that $tg\alpha \sim \lambda$. The following dependence is derived on the assumption of interaction between the space charge due to the presence of electrically charged chinks and the electrons emitted from the "bottoms" of the chinks:

$$tg\alpha \sim \frac{D(\bar{E}_0 - \bar{E})}{p^2} + \lambda_{D=0}$$

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L 22371-66 EWT(1) IJP(c) AT

ACC NR: AP6009604 SOURCE CODE: PO/0045/65/028/004/0483/0490

13

B

AUTHOR: Lewowska, L.; Sujak, B.

ORG: Laboratory for Induced Electron Emission, Institute of Experimental Physics, Wroclaw University

TITLE: Effect of light intensity on the decay curves of photostimulated (exo)electron emission from Al_2O_3 layers on aluminum

SOURCE: Acta physica polonica, v. 28, no. 4, 1965, 483-490

TOPIC TAGS: light effect, decay curve, electron emission, temperature dependence, activation energy, Fermi level, optical excitation

ABSTRACT: The shape of the decay curves of photostimulated electron emission from anodic Al_2O_3 layers is found to depend strongly on the intensity of stimulating light. The experimental curves of emission decay *versus* time were approximated by means of a sum of exponentials, and the decay constants λ were determined for various intensities of light, leading to a relationship between the decay constants λ_1 and the stimulating light intensity of the form $\lambda_1 \sim J^{1/2}$. Moreover, the temperature-dependence of the decay constant was investigated; the relations derived yielded the activation energy E. It is suggested

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ACC NR: AP6009604 O

that the decay constant λ_1 is proportional to the number of free electrons n per unit volume of the crystal, whereas the value of E determined from the temperature-dependence of the decay constant λ_1, corresponds to the distance between the Fermi quasi-level and the bottom of the conduction band at a given value of optical excitation. Orig. art. has: 4 figures and 10 formulas. [Based on author's abstract]

[KS]

SUB CODE: 20/ SUBM DATE: 09Mar65/ ORIG REF: 007/ OTH REF: 004/

Card 2/2 ddo

L 22372-66 EWP(e) IJP(c) AT/WP

ACC NR: AP6009605 SOURCE CODE: PO/0045/65/028/004/0491/0497

40
B

AUTHOR: Sujak, B.; Kusz, J.

ORG: Laboratory for Induced Electron Emission, Institute of Experimental Physics, Wroclaw University; Department of Experimental Physics, Pedagogical College of Opole

21, 44, 55

TITLE: Field-excited (exo)electron emission from Rochelle salt crystals

SOURCE: Acta physica polonica, v. 28, no. 4, 1965, 491-497

TOPIC TAGS: electron emission, barium titanate, Rochelle salt, electron polarization, surface ionization

ABSTRACT: (Exo)electron emission excited by an externally applied electric field was found to occur from crystalline Rochelle salt specimens and from ceramic samples of the type of barium titanate.15 Subsequent to polarization in a sufficiently intense electric field, a Rochelle salt specimen becomes a source of exoelectrons without requiring light stimulation. The lowest polarizing voltage U_p at which exoelectrons begin to be recorded definitely depends on the crystallographical plane parallel to which the specimen has been cut. U_p is lowest in specimens cut parallel to the plane (100). Its value, as

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ACC NR: AP6009605

well as the variations in the recorded intensity of exoelectron emission, depend markedly on the previous history of the specimen. The results make it highly plausible that this "emission" is due to surface ionization of the gas wherein the sample is immersed. Orig. art. has: 5 figures and 3 formulas. [Based on author's abstract] [KS]

SUB CODE: 20/ SUBM DATE: 09Mar65/ ORIG REF: 002/
SOV REF: 002/ OTH REF: 001

Card 2/2 dda

L 21457-66 IJP(c) AT
ACC NR: AP6001449 SOURCE CODE: PO/0045/65/028/005/0681/0687

AUTHOR: Kowalczyk, R.; Pirog, M.; Sujak, B.

ORG: [Kowalczyk; Pirog] Solid Surface Physics Laboratory, Department of Experimental Physics, Pedagogical College of Opole, Poland (Zaklad Fizyki Powierzchni Ciala Stalego, Katedra Fizyki Doswiaddczalnej Wyszej Szkoly Pedagogicznej w Opolu); [Sujak] Laboratory for Induced Electron Emission, Institute of Experimental Physics, Wroclaw University, Poland Department of Experimental Physics, Pedagogical College of Opole, Poland (Zaklad Wzbudzonej Emisji Elektronow, Katedra Fizyki Doswiadczalnej Uniwersytetu Wroclawskiego)

TITLE: Thermostimulated exoelectron emission from hydrates, as detected in atmospheric air

SOURCE: Acta physica polonica, v. 28, no. 5, 1965, 681-687

TOPIC TAGS: exoelectron emission, atmospheric air, crystalline hydrates, quinine sulfate

ABSTRACT: An open point counter with quenching vapor over a free liquid surface was used in investigations of exoelectron emission from the following crystalline hydrates in the process of bonding and losing water molecules: $C_{20}H_{24}O_2N_2 \cdot H_2SO_4 \cdot 8H_2O$, $Na_2CO_3 \cdot 10H_2O$, $NiSO_4 \cdot 7H_2O$,

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ACC NR: AP6001449 O

$CuSO_4 \cdot 5H_2O$, $MgSO_4 \cdot 7H_2O$, $FeSO_4 \cdot 7H_2O$. Emission of exoelectrons into an atmosphere of air was observed to occur only from quinine sulfate. Irradiation of previously dehydrated hydrates with UV radiation as well as with α and β particles failed to excite the samples to emit exoelectrons when heated in an atmosphere of air. Orig. art. has: 7 figures. [Author's abstract.] [KS]

SUB CODE: 20,08 SUBM DATE: 31Mar65/ ORIG REF: 006/ OTH REF: 003

Card 2/2 dda

L 33438-66 EWP(t)/ETI IJP(c) JD/AT/GS
ACC NR: AP6014319 SOURCE CODE: PO/0045/66/029/004/0523/0531

AUTHOR: Sujak, B.; Gieroszynski, A.

ORG: Laboratory for Induced Electron Emission, Institute of Experimental Physics, Wroclaw University (Zaklad Wzbudzonej Emisji Elektronow przy Katedrze Fizyki Doswiadczalnej Uniwersytetu Wroclawskiego)

TITLE: Spectral investigations of photostimulated emission of (exo)electrons in vacuum from plastically deformed aluminum covered with an oxide layer. Part II. Limiting oxide thickness D_g

SOURCE: Acta physica polonica, v. 29, no. 4, 1966, 523-531

TOPIC TAGS: electron emission, aluminum oxide, ~~deformation rate~~, plastic deformation, oxide formation, ~~spectral investigation, work function~~ MONOCHROMATIC RADIATION

ABSTRACT: It has been found that in the case of vacuum and monochromatic light wavelengths $\lambda \leq \lambda_0$ the following relations hold for the limiting thickness D_g of an oxide layer covering a deformed aluminium sample:

1) $D_g = a_1 I^{\beta}$, $\beta = 0.145$, I — intensity of the stimulating light,

2) $D_g^2 = a_3 \left(\frac{1}{\lambda} - \frac{1}{\lambda_0}\right)$, $\lambda_0 = 5500 \times 10^{-8}$ cm, $a_3 = 1.4\ 10^{-15}$ cm^3, λ — wavelength of the stimulating light,

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ACC NR: AP6914319

3) $D_g = a_1 e^{bE}$, $E = \frac{\Delta U}{d}$, where

E is the accelerating field strength, ΔU is the accelerating voltage between the grid and the sample, and d is the distance between the grid and the sample. Assuming that the electrified fissure model is correct, the maximum energy of (exo)electrons emitted for definite oxide layer thickness D_g has been calculated, according to the derived formula

$$T_{max} \approx \frac{hc}{a_2} D_g^2.$$

The T_{max} values obtained are within the interval $0 \leq T_{max} \leq 3$ eV, depending on the wavelength λ and the intensity I of the light stimulating the emission. The work function determined, $\phi = 22.25$ eV, has been assigned to electrons emitted from the aluminium base to the transitory oxide-metal layer which is the "bottom" of the fissure-emitting electrons. Orig. art. has: 7 figures and 15 formulas. [Based on author's abstract] [AM]

SUB CODE: 20/ SUBM DATE: 29Jun65/ ORIG REF: 007/ SOV REF: 002/ OTH REF: 004

Card 2/2 ULR

TITLE: Point counter with quenching vapor above the free surface of the liquid (exoelectron detector)

SOURCE: Acta physica polonica, v. 26, no. 1, 1964, 3-10

TOPIC TAGS: open point counter, exoelectron emission counter, exoelectron detector, ionizing radiation determination, ionizing radiation, dosimetric determination

ABSTRACT: A special type of open-point counter with quenching vapor above the free liquid surface and a pulse amplitude of approximately 2 v was constructed. It is in many respects superior to the commonly used air point counter and, in particular, to the flow counter. When filled with ethyl alcohol, this counter has the following properties if operated under appropriate conditions: 1) it has a characteristic with a relative steepness of about 0.3% per volt whereas a flow counter

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ACCESSION NR: AP4046065

2

operated under the same conditions has over 1% per volt; 2) its sensitivity to atmospheric humidity can be made exceedingly low while [illegible] requires trying the air current, 3) it has greater operational stability, owing to the elimination of all variable parameters related to the flow of air; 4) it allows exoelectron counting [illegible] the limit for a [illegible] such properties [illegible] emission fr[illegible] stabilization. More- [illegible] decisive role in the wider application of exoelectron emission in dosimetric determi- [illegible] figures.

[illegible] College, Opole; [illegible] of Experimental [illegible]

SUBMITTED: 30Dec63 ENCL: 00

SUB CODE: NP NO REF SOV: 001 OTHER: 007

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ACCESSION NR: AP4049388

alcohol and the halogen-containing vapor was 1 cm Hg in all cases. The experimental counter was continually checked against a gamma and

[illegible] counting rate when [illegible] and Br2 [illegible] emission in the case [illegible] it was found that in the electronegative gases (vapors) a change in the counting rate can be superposed on the variations in exoelectron emission intensity caused by changes in the atmosphere in which that emission occurs if the sample is not separated mechanically from the atmosphere in the counter. Reductions in the counting rate can predominate when the diameters of the counter and of the counter anode are too large and the electronegative gas concentration is just sufficient for negative ions to reach the active part of the counter near the anode.

ASSOCIATION: Zaklad wzbudzonej emisji elektronow przy Katedrze fizyki doswiadczalnej, Uniwersytet Wroclawski, Wroclaw (Laboratory for Induced [illegible] Emission, Institute of Experimental Physics, Wroclaw University, [illegible] Physics, Pedagogical

Card 2/3

L 20069-65
ACCESSION NR: AP4049188

College of Opera

SUBMITTED: 06Feb64 ENCL: 00 SUB CODE: NP, MS

NO REF SOV: 000 OTHER: 002

Card 3/3

SUJAK, B.; BOJKO, I.

On the influence of halogene-mixture vapors on induced electron emission (exoelectron emission) into a gaseous atmosphere.
Acta physica Pol 26 no.2:171-174 '64.

1. Laboratory for Induced Electron Emission of the Institute of Experimental Physics of the University, Wroclaw, and Laboratory of Surface Physics of the Department of Physics of the Teachers College, Opole (for Sujak). 2. Laboratory of Surface Physics of The Department of Physics of the Teachers College Opole (for Bojko).

GIEROSZYNSKI, A.; MADER, J.; SUJAK, B.

Effect of the thickness of the surface cover layer and the humidity of air on the initial extension, at which the phosphorus stimulated emission of exoelectrons starts in deformed aluminum. Acta physica Pol 26 no.6:1033-1043 '64.

1. Laboratory of Excited Emission of Electrons at the Department of Experimental Physics of Wroclaw University. Submitted February 29, 1964.

PIROG, Mieczyslaw; STEPNIOWSKI, Ignacy; SUJAK, Bogdan

Point counter with quenching vapor above the free surface of the liquid (exoelectron detector). Acta physica Pol 26 no.1: 3-10 Jl '64.

1. Department of Physics, Teachers College, Opole (for Pirog and Stepniowski). 2. Laboratory of Induced Electron Emission, Institute of Experimental Physics, University, Wroclaw, and Department of Physics, Teachers College, Opole (for Sujak).

[redacted] 573/0579

[redacted] of aqueous NH4OH

solutions of low concentration

SOURCE: Acta physica polonica, v. 27, no. 4, 365, 573-579

TOPIC TAGS: exoelectronic emission, photostimulated emission, ammonia solution,

[redacted] of freezing

of a low concentration aqueous solution of NH_4OH [redacted] measured at different concentrations and rates of freezing. The apparatus employed is illustrated in Fig. 1 of the Enclosure. The potential difference was measured with a heterostatically [redacted] to measure the exoelectron- [redacted]. The observations confirm the existence of a potential difference between the solid phase (ice) and liquid phase of dilute [redacted] as observed by [redacted] and Bynolds (Phys. Rev. 78, 254, 1950). A time dependence was observed for the potential difference,

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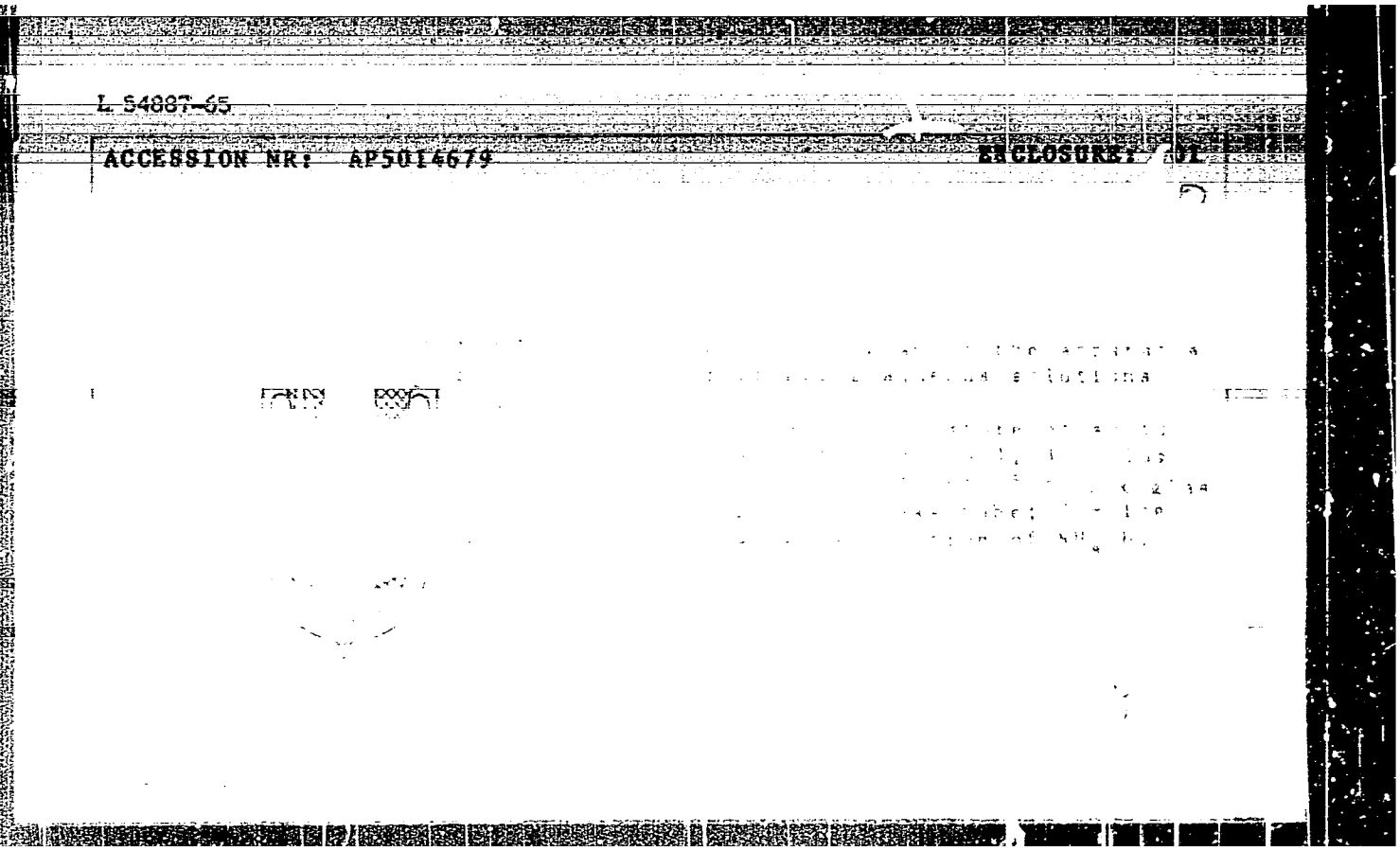
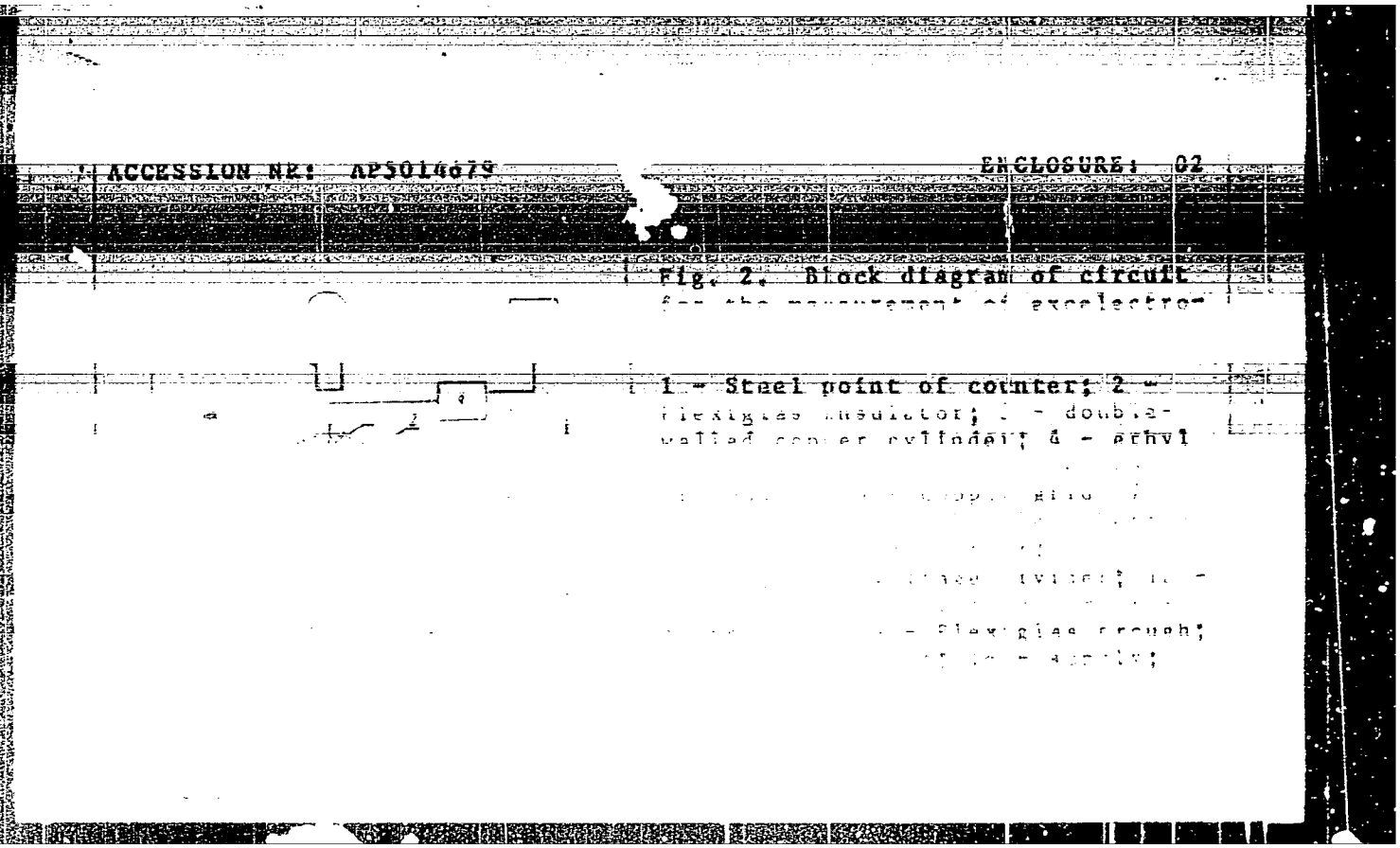
...ing and gradually ... down thereafter. The potential distribution ... surface was deter- ... stimulated exoelec- ... ation, and was ... intensity of the ... potential of the ice. Orig. art. has: 6 figures.

ASSOCIATION: Surface Physics Laboratory, Department of Physics, Pedagogical Col- ... Laboratory for Induced Electron Emission, Institute of ...

SUBMITTED: 07Jul64 ENCL: 00 SUB CODE:





ACCESSION NR: AP5014679 ENCLOSURE: 02

Fig. 2. Block diagram of circuit

1 - Steel point of counter; 2 -

L 11199-66 EWT(1)/EWA(m)-2 IJP(c) AT

ACC NR: AP5024612 SOURCE CODE: PO/0045/65/028/003/0299/0309

AUTHOR: Stepniewski, W.; Gasior, S.; Sujak, B.

ORG: Physics Department, Medical Academy, Wroclaw; Laboratory for Induced Electron Emission, Institute of Experimental Physics, Wroclaw University

TITLE: Relation between the spectral distribution of optical absorption in colored NaCl and KCl single crystals and their decay curves of photostimulated (exo) electron emission

SOURCE: Acta physica polonica, v. 28, no. 3, 1965, 299-309

TOPIC TAGS: crystal optic property, exothermic effect, photosensitivity, electron emission

ABSTRACT: Previous studies on photostimulated exoelectron emission are continued using monochromatic instead of white light. A flo. point counter operating on a mixture of air and ethyl alcohol measured the emission. The wavelength of incident light was varied by an especially constructed micrometer screw. The range of wavelength was from 4000 to 7000 Å. At constant wavelength (σ/ν) of the light incident on the specimen the decay constants λ_i were determined for various accelerating voltages. The values for λ_1, λ_2 and λ_3 at the same accelerating voltage differ for various wavelengths of the applied light. Graphs of a given decay constant λ_i versus the accele-

Card 1/2

rating voltage U were plotted, $(\lambda_i = f_i(U))$ for both NaCl and KCl. The equation of the curve of photostimulated exoelectron emission decay for spectrally decomposed light assumes the form

$$\frac{N}{t} = \left(\frac{N}{t}\right)_{01} e^{-\left[\lambda_{01}\left(\frac{e}{\nu}\right) - \left(A_{0,\max} + A'\frac{e}{\nu}\right)\sqrt{U}\right]t} + \left(\frac{N}{t}\right)_{02} e^{-\left[\lambda_{02}\left(\frac{e}{\nu}\right) - \left(B_{0,\max} - B'\frac{e}{\nu}\right)U^{-n}\right]t} + \left(\frac{N}{t}\right)_{03} e^{-\left[\lambda_{03}\left(\frac{e}{\nu}\right) - \left(C_{0,\max} - C'\frac{e}{\nu}\right)U^{n}\right]t}.$$

values of the constants A, B, C, A', B', C', for NaCl and KCl are given in a table. The curves for colored alkali halides measured in an atmosphere with high concentration of ethyl alcohol vapor are similar to the curves of optical absorption of F-centers and M-centers at room temperature. The energy depth of donors acting as source of exoelectrons is easily calculated from the absorption curves. Photostimulated exoelectron emission is apparently a two stage process. Orig. art. has: 16 formulas, 11 figures, 1 table.

SUB CODE: 20/ SUBM DATE: 05Feb65/ ORIG REF: 001/ OTH REF: 004

Card 2/2

L 4342-66 EWP(1)/EWP(t)/EWP(b)

ACCESSION NR: AP5024616 PO/0045/65/028/003/0343/0348

AUTHOR: Lewowski, T.; Sendecki, S.; Sujak, B.

TITLE: Current-voltage characteristics of a system of thin metal-insulator-metal films

SOURCE: Acta physica polonica, v. 28, no. 3, 1965, 343-348

TOPIC TAGS: volt ampere characteristic, dielectric capacitor, thin film circuit

ABSTRACT: The current-voltage characteristics of metal-insulator-metal diodes are studied. Inorganic dielectrics (CaF_2 and MgF_2) were studied together with organic insulators (plexiglass and collodium). Epoxy resin was used for cementing a sheet of mica a few hundredths of a millimeter thick to a silver film with a 5 mm aperture in the center. An aluminum, nickel, or silver plate precoated with the dielectric was then cemented to the other side of the mica sheet. A nickel-collodium-silver diode shows a maximum current at about 2 volts. The height of the maximum varies from a few ma to several dozen ma from one specimen to another and from one measuring cycle to another. The measurement cycle consisted of increasing the applied voltage from zero up to some definite value at a constant rate, and then reducing the voltage back to zero. It was found that the current maximum during decreasing voltage depends on

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L 4342-66
ACCESSION NR: AP5024616

the maximum voltage previously applied to the diode. In general, the maximum current increases with the maximum voltage. A maximum current was observed at a little over 3 volts for a CaF_2 dielectric. Specimens with this type of dielectric showed a minimum on the current-voltage curve between 8 and 9 volts with a spontaneous rise in current at about 14 volts. A reduction in voltage from this value gives a slightly higher curve than during voltage increase. However, the current minimum during voltage reduction is the same as for voltage increase. The voltage-current characteristics of MgF_2 specimens showed a current maximum between 2 and 3 volts. These measurements were made in vacuum. Measurements of the characteristics of a silver-magnesium fluoride-silver diode in air show a new current maximum at about 0.5 volt which is strongly dependent on atmospheric humidity, while the maximum between 2 and 3 volts is reduced. Reevacuation restores the original shape of the curve. Application of a layer of silicon oil to the upper electrode of this same diode eliminates the maximum at 0.5 volts while the maximum between 2 and 3 volts remains unchanged. The curve for decreasing voltage in this case lies below that for increasing voltage. Two explanations are given for the effect of water vapor and oil on the voltage-current characteristics of the diode: 1) the water vapor or oil could pass through fissures in the dielectric layer to affect the electric field distribution in the diode; and 2) partial destruction of the upper electrode by breakdown may form an irregular metal

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L 4342-66

ACCESSION NR: AP5024616

lattice through which part of the electric field in the diode escapes. In this case, the oil layer pushes the electric field back into the condenser. It is too early to conclude which of these mechanisms is predominant. Orig. art. has: 4 figures. [14]

ASSOCIATION: Zaklad Wzbudzonej Emisji Elektronow przy Katedrze Fizyki Doswiadczalnej, Uniwersytet Wroclawski (Laboratory for Induced Electron Emission, Institute of Experimental Physics, Wroclaw University)

SUBMITTED: 23Feb65 ENCL: 00 SUB CODE: EC

NO REF SOV: 000 OTHER: 008 ATD PRESS: 4126

Card 3/3

L 8258-66 EWP(e)/EWP(b) DIAAP WW/WH

ACCESSION NR: AP5017139 PO/0045/65/027/005/0671/0630

AUTHOR: Bujok, J.; Sujak, B.

TITLE: Stress-induced variations in the spectral distribution of γ-radiation from Cs^{137} transmitted by graphited carbon

SOURCE: Acta physica polonica, v. 27, no. 5, 1965, 671-630

TOPIC TAGS: gamma radiation, cesium, carbon, stress analysis

ABSTRACT: The authors investigated variations in the spectral energy distribution of gamma (Cs^{137}) radiation transmitted by graphitized carbon, in their dependence on vertical load, with the purpose of collecting experimental data to clarify the variations observed in the intensity of gamma radiation scattered on carbon due to stress. Based on this work the authors come to the following conclusions: the interaction between gamma (Cs^{137}) quanta and the graphitized carbon depends on the state of stress in the latter. The variations observed previously by the authors in intensity of radiation can probably be attributed to changes in the energy distribution of the radiation transmitted due to the load on the specimen. Investiga-

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L 8258-66
ACCESSION NR: AP5017139

tions now are in process at the Central Institute of Mining, aimed toward an explanation of earlier results obtained on changes in intensity of gamma radiation scattered on bulk carbon under the effect of external forces. Orig. art. has: 11 figures and 7 references.

ASSOCIATION: Central Mining Institute, Katowice, Poland; Institute of Experimental Physics, Wroclaw University, Wroclaw, Poland

SUBMITTED: 12Aug64 ENCL: 00 SUB CODE: NP, IC

NO REF SOV: 000 OTHER: 007

Card 2/2

L 10615-66 FBD/EEC(k)-2/T/EWP(k)/EWA(m)-2/EWA(h) SCTB/IJP(c) WG/WH

ACC NR: AP6001452 SOURCE CODE: PO/0045/65/028/005/0729/0731

80 B

AUTHOR: Sujak, B.; Niklas, A.

ORG: Laboratory of Induced Electron Emission, Institute of Experimental Physics, Wroclaw University, Wroclaw; Department of Experimental Physics, Pedagogical College of Opole, Poland

TITLE: (Exo)electron emission from laser-ruby crystals

SOURCE: Acta physica polonica, v. 28, no. 5, 1965, 729-731

TOPIC TAGS: laser, ruby laser, laser emission, electron emission, thermionic emission

ABSTRACT: Results are given on the thermostimulated, induced electron emission (emission of exoelectrons) by specimens cut out from laser-ruby crystals ($Al_2O_3 + Cr^{+++}$ (0.05% by weight) and $Al_2O_3 + Cr^{+++}$(0.1%)). An open point counter with quenching vapor over the free surface of a liquid was used for measuring the emitted electrons. The specimens were irradiated with unfiltered x-rays (60 kV; 3.5 ma anode current, Cu-anode) for 15 minutes at room temperature before the electron "glow curves" were measured. Characteristic curves of the thermostimulated electron emission from the crystals showed that a higher concentration of Cr ions quenches the exoelectron emission, particularly with regard to some peaks. Virtually no laser action occurred with the $Al_2O_3 + Cr^{+++}$(0.1%) crystal. Orig. art. has: 2 figures and 1 table. [JA]

Card 1/2

POLAND

~~[redacted]~~ SUJAK, Bohdan

RAFALOWICZ, Jerzy; PEGA, Edward; SUJAK, Bohdan

1. Low Temperature Laboratory, Institute of Physics, Polish Academy of Sciences (Zaklad Niskich Temperatur Instytutu Fizyki PAN), Wroclaw (for Rafalowicz); 2. Dept. of Experimental Physics, Univ. of Wroclaw (Katedra Fizyki Doswiadczalnej Uniwersytetu Wroclawskiego) (for Pega and Sujak)

Warsaw, Przeglad elektroniki, No 8, Aug 1966, pp 402-406

"Behavior of some Polish resistors in liquid helium temperatures."

L 44093-66 EWP(t)/ETI/EWP(k) IJP(c) JD/AT/JH/JW

ACC NR: AP6021909 SOURCE CODE: PO/0045/66/029/003/0275/0282

41
B

AUTHOR: Gieroczynski, A.; Sujak, B.

ORG: Laboratory for Induced Electron Emission, Institute of Experimental Physics, Wroclaw University, Wroclaw (Zaklad Wzbudzonej Emisji Elektronow przy Katedrze Fizyki Doswiadczlnej Uniwersytetu Wroclawskiego)

TITLE: Spectral investigations of photostimulated emission of (exo) electrons in vacuum from plastically deformed aluminum covered with an oxide layer. Part I. Initial deformation

SOURCE: Acta physica polonica, v. 29, no. 3, 1966, 275-282

TOPIC TAGS: photostimulated emission, plastic deformation, deformed aluminum, spectral investigation, oxide layer

ABSTRACT: It has been found that initial deformation value (ε_0) depends not only on the parameters investigated in previous papers, i. e., oxide-layer thickness D,

Card 1/2

L 36271-66 IJP(c) AT
ACC NR: AP6014320 SOURCE CODE: PO/0045/66/029/004/0533/0547

10
B

AUTHOR: Gieroszynski, A.; Sujak, B.

ORG: Laboratory for Induced Electron Emission, Institute of Experimental Physics, Wroclaw University, Wroclaw (Zaklad Wzbudzonej Emisji Elektronow, Katedra Fozulo Doswiadczalnej, Uniwersytet Wroclawski)

TITLE: 27 Spectral investigations of photostimulated emission of (exo) electrons in vacuum from plastically deformed aluminum covered with an oxide layer. Part III. Slope of the decay curve in its initial stage

SOURCE: Acta physica polonica, v. 29, no.4, 1966, 533-547

TOPIC TAGS: aluminum oxide, metal oxide, electron, free electron, electron emission, photoelectric effect, space charge, monochromatic light

ABSTRACT: It has been found that the slope of the decay curve in log $\frac{N}{t}$ vs t coordinates in the vicinity of t = 0 influenced by the wave-

Card 1/2

L 45178-66 EWP(t)/ETI IJP(c) JD/WW
ACC NR: AP6026995 SOURCE CODE: PO/0045/66/029/005/0631/0641

AUTHOR: Rafalowicz, J.; Pega, E.; Sujak, B.

ORG: [Rafalowicz] Low Temperature Laboratory, Institute of Physics, Polish Academy of Sciences, Wroclaw (Zaklad Niskich Temperatur Instytutu Fizyki PAN); [Pega; Sujak] Institute of Experimental Physics, Wroclaw University, Wroclaw (Katedra Fizyki Doswiadczalnej Uniwersytetu Wroclawskiego)

TITLE: On the temperature jump between the surface of an overheated thermometric carbon resistor and helium-I bath

SOURCE: Acta physica polonica, v. 29, no. 5, 1966, 631-641

TOPIC TAGS: helium bath, carbon resistor

ABSTRACT: Starting with the radial distribution function of temperature for a volume-heated solid cylinder, a formula was derived for the effective temperature jump between the surface of an overheated specimen and the helium-I bath

$$\Delta T = (T_{ef} - T_{HeI}) - \frac{Q}{4\pi l a T_{ef}^n}$$

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L 45178-66

ACC NR: AP6026995 O

All quanities appearing in this formula for the temperature jump can be determined experimentally. This made it possible to find the relation between the temperature jump and the power produced in the specimen. A study was suggested of the temperature jump at the surface of overheated cylindric semiconductor specimens by the method based on measurements of the effective temperature of the specimen, the temperature of the helium bath, and the power produced in the specimen, with a graphic determination of the specimen' s effective thermal conductivity as a function of its effective temperature. For heat-flux densities over 300 $\mu W/cm^2$ indications were found of a "bubble" convection-type mechanism (occuring in jumps) for the removal of heat from the surface of the superheated specimen into the helium-I bath. Orig. art. has: 6 figures and 12 formulas. [Based on authors' abstract] [KS]

SUB CODE: 20/ SUBM DATE: 02Aug65/ ORIG REF: 003/ SOV REF: 001/ OTH REF: 007/

Card 2/2 pla

01261-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6031835 SOURCE CODE: PO/0045/66/030/001/0051/0057

B

AUTHOR: Sujak, B.; Gorecki, T.; Malkiewicz, M.; Stepniowski, I.

ORG: [Sujak] Laboratory for Induced Electron Emission, Institute of Experimental Physics, Wroclaw University, Wroclaw (Zaklad Wzbudzonej Emisji Elektronow przy Katedrze Fizyki Doswiadczalnej, Uniwersytet Wroclawski); Department of Experimental PHysics, Opole Pedagogical College, Opole (Katedra Fizyki Doswiadczalnej, WSP w Opolu); [Gorecki; Malkiewicz; Stepniowski] Solid State Surface Physics Laboratory, Department of Experimental Physics, Opole Pedagogical College, Opole (Zaklad Fizyki Powierzchni Ciala Stalego przy Katedrze Fizyki Doswiadczalnej, WSP w Opolu)

TITLE: Photostimulated emission of exoelectrons into the atmosphere during recrystallization of metals and alloys

SOURCE: Acta physica polonica, v. 30, no. 1, 1966, 51-57

TOPIC TAGS: bismuth, cadmium, photostimulated electron emission, bismuth base alloy, cadmium base alloy, bismuth cadmium alloy, metal recrystallization, UV light stimulation

ABSTRACT: The emission of exoelectrons into the atmosphere during recrystallization of bismuth, cadmium, and their alloys has been

18 21

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SUJAK, S.

[illegible] (1)

[illegible] Milk Molasses [illegible]

[illegible]

[illegible] 1954, pp. 401-403, 2 tabs

It has been stated that the amount of riboflavin in skimmed milk [illegible] while milk whey contains [illegible] [illegible]

[illegible] its usefulness for the production of food [illegible] dry food, spice, canned foods [illegible] as well as in the baking and confectionery industry.

S[illegible]IAK, S.

MD

4030 664.641.4

[illegible]kowski S., Suwak S. The Utilisation of Waste Whey-Protein in Baking [illegible] Enhance the Nutritional Value of Bread.

„Zastosowanie odpadkowego białka serwatkowego w piekarstwie w celu podniesienia wartości odżywczej pieczywa", Przemysł Spożywczy, No. 3, 1955, pp. 105—108, 3 figs.

The authors investigated the posibility of utilising whey-protein and [illegible] products of the production of lactose — in the pro- [illegible]

addition [illegible] post-lactose molasses raises by 10 per cent the total protein content in rye bread from flour type 800 (about 60 per cent), the content of lysine by 60 per cent, of thiamin by 4 per cent, riboflavin by 40 per cent, and calcium and phosphorus five times and twice respectively. The addition of larger quantities of post lactose molasses rich in riboflavin and of another factor of high lysine and B group vitamin content (e.g. dried yeast) [illegible] possible to obtain a more favourable level of these [illegible]

[illegible] as to supply [illegible] 400 g of 60% rye bread about 50 per cent of the daily requirement.

DZIERZKOWA, Wanda; BORODEJ, Alicja Kober; SUJAKOWA, Kulesza; SUJAKOWA, Alina

Studies on immune iso-antibodies in human milk. II. Role of Munk-Andersen's reaction in the evaluation of the nature of antibodies in the blood serum and milk of women with main group conflict. Pol. tyg. lek. 17 no.13:461-464 26 Mr '62.

1. Ze Stacji Krwiodawstwa we Wroclawiu; dyrektor: doc. dr Tadeusz Dorobisz i ze Szpitala Miejskiego im. Madurowicza we Wroclawiu; dyrektor: dr med. Sergiusz Doganowski.

(MILK HUMAN) (ANTIBODIES) (ERYTHROBLASTOSIS FETAL) (BLOOD GROUPS)

DZIERZKOWA, Wanda; BORODEJ, Alicja Kober; SUJAKOWA, Kulesza; SUJAKOWA, Alina

Studies on immune iso-antibodies in human milk. II. Role of Munk-Andersen's reaction in the evaluation of the nature of antibodies in the blood serum and milk of women with main group conflict. Pol. tyg. lek. 17 no.13:461-464 26 Mr '62.

1. Ze Stacji Krwiodawstwa we Wroclawiu; dyrektor: doc. dr Tadeusz Dorobisz i ze Szpitala Miejskiego im. Madurowicza we Wroclawiu; dyrektor: dr med. Sergiusz Doganowski.

(MILK HUMAN) (ANTIBODIES) (ERYTHROBLASTOSIS FETAL) (BLOOD GROUPS)

SUJAN, Ivo, inz.

Removal of boring tubes. Geol pruzkum 5 no.5:135-136 My '63.

1. Geologicky pruzkum, n.p., Brno.

SILVAY, J.; HUBKA, M.; SUJANSKY, E.

Hematological changes during and after extracorporeal circulation during artificial systoles. Bratisl. lek. listy 43 Pt. 2 no.4:204-209 '63.

1. CSAV - Oddelenie experimentalnej chirurgie Ustavu experimentalnej mediciny SAV v Bratislave, veduci akademik CSAV K. Siska.

(HEART, MECHANICAL) (HEART ARREST)
(LEUKOCYTE COUNT) (ERYTHROCYTE COUNT)
(HEMOGLOBINOMETRY) (HEMATOCRIT)
(BLOOD PLATELETS) (CORONARY VESSELS)
(POTASSIUM)